WORKING WOOD BY HAND (MOSTLY)

Quercus

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How to Join the Short Course Revolution

No.1 Westonbirt Woodworks,UK

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Elia Bizzarri Milk Painting
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FEATURES

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QM19 July/August 2023
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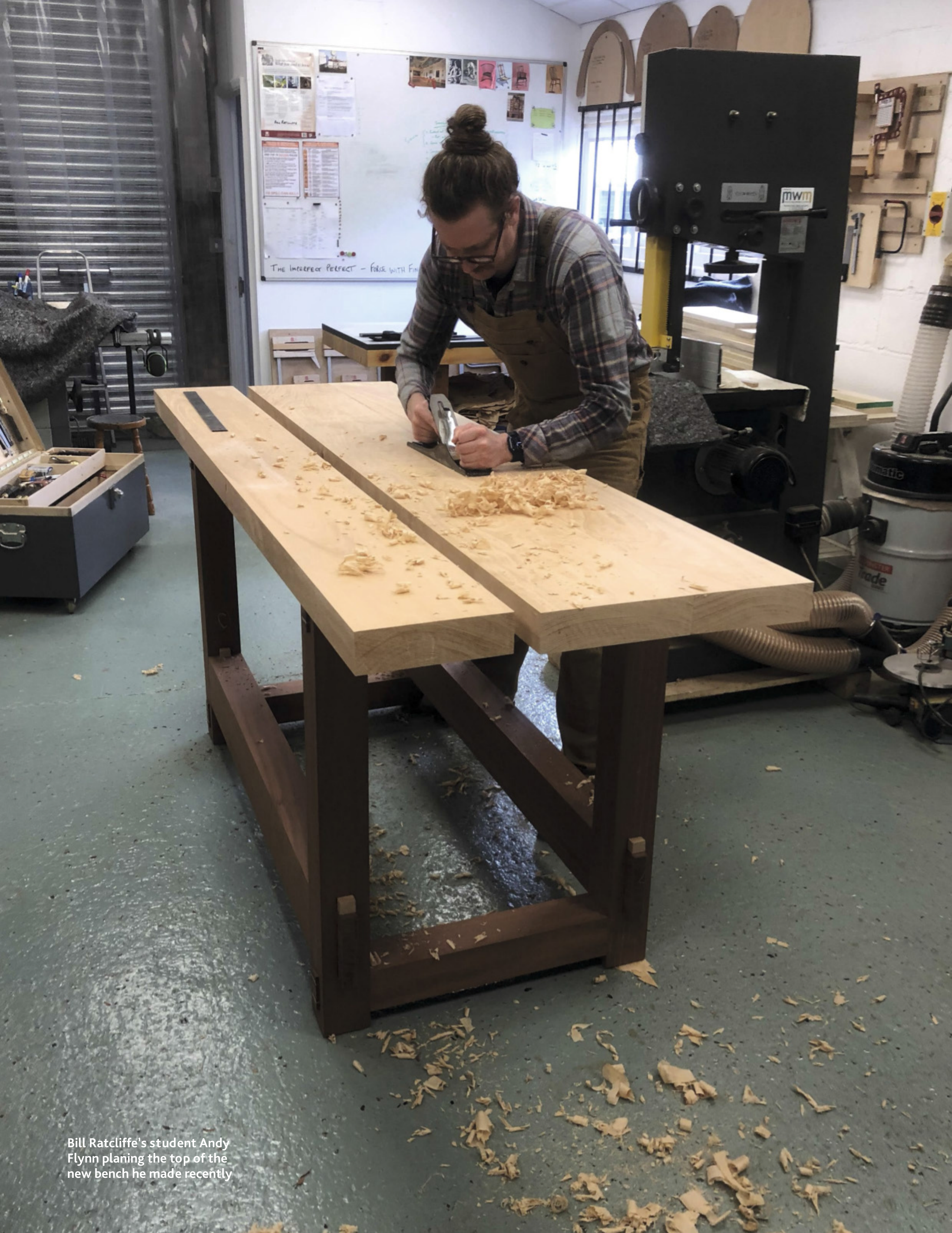
THE IMPERFECT PERFECT – FORGE WITH FIN
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Bill Ratcliffe's student Andy Flynn planing the top of the new bench he made recently

WORKING WOOD BY HAND (MOSTLY)

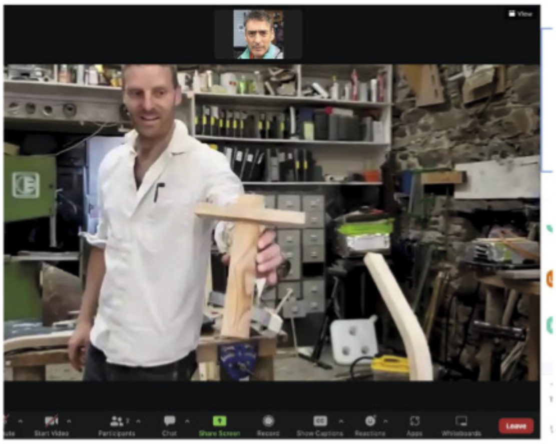
Quercus

MAGAZINE

I love steambending. Always have done. My first chair, made when I was 16, was built with strips of thin ply that had to be steamed to get round the tight corners of my simple Scandi design, before being removed for drying and then gluing. I've made others since, my favourite being constructed using the Tage Frid freeform lamination way, twisted around a skeletal frame. So it was with a touch nostalgia that I've recently spent a week in the woods making a traditional Windsor, and then a 'virtual' weekend in 'virtual' Cumbria watching over his shoulder the bending genius that is Charlie Whinney. Then there was the week, as you will learn next issue, making a dovetailed box in East Sussex, which I might now finish with milk paint after my evening in North Carolina being taught how to apply its chalkiness by the amusing double act that is Curtis Buchanan and Elia Bizzarri.

That's nothing compared to the excitement of soon being the owner of an Ian Parker bench (see p14). It looks so beautiful I'll never have the timerity to drill a hole for a Carvers Vice, as Chris Schwarz was seen doing in June (p35). The workbench features a split top, just as does the bench Bill Ratcliffe made recently (p40) so who knows what will happen next.

Nick Gibbs, Editor



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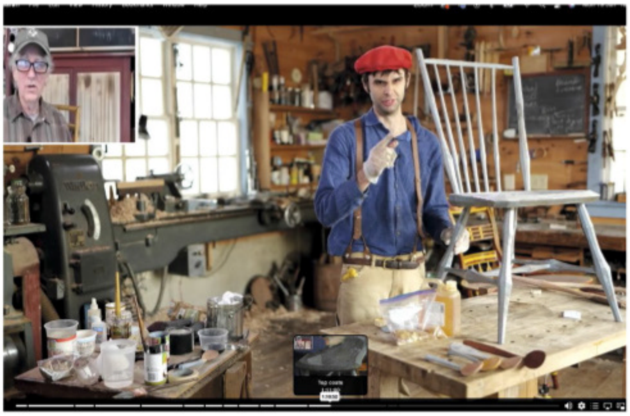

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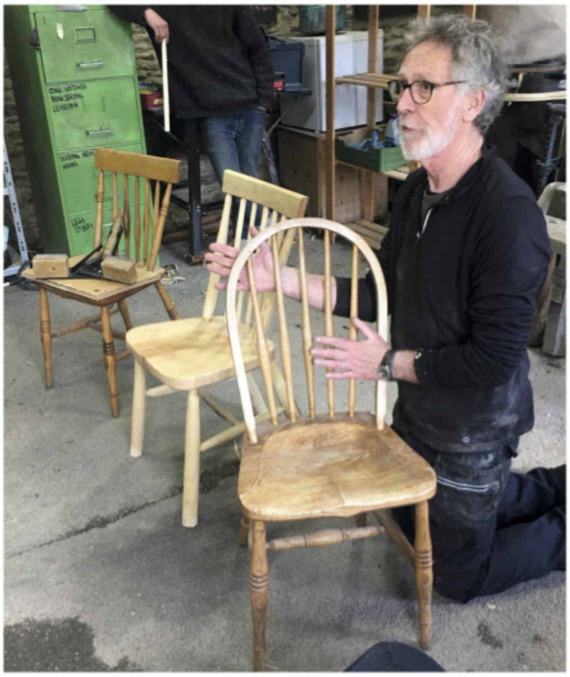

First thing, Day One, and Paul (above) introduces bow back and comb back Windsor styles, with Jon (above left) choosing the comb, and Peter (left, in the hat) going well off piste, hoping to build a corner chair with an armbow and lots of spindles

Look down from Westonbirt Arboretum's Tree Top Walkway and you can't help but notice a yard of open workshops, smell the smoke wafting from a stove and hear the click, click, click of pole-lathes at work. That's Westonbirt Woodworks, one of the Arboretum's hidden treasures, where chairs are made and sold, where courses are run, and where apprentices are given a leg-up to become professional woodworkers.

For 20 years, courses have been run by chairmaker Paul Hayden, teaching enthusiastic students, many of them beginners, how to make a 'Windsor' in six days. "We try to offer," says Paul, "a combination of teaching serious skills while being playful, irreverant and inclusive." Some 2500 participants have made chairs with Paul and his team of assistants, learning how to use a pole-lathe, an adze and a shaving horse, not to mention a travisher, spokeshave and kettle. By the end of the week a student is guaranteed to be taking home a chair they've made, each one unique in its own special way.

At Westonbirt Woodworks keen apprentices like Ben Groenevelt and Harry Morris are inspired and guided by Paul towards a career running courses and/or making chairs. A few years ago, Pete Murray was chosen as the Young Craftsman of the Year, having spent a couple of years with Paul as assistant and pupil. Courses are run twice a month during the summer, with up to 12 enthusiasts per week, but during the winter time in the workshop is spent making chairs, with apprentices learning vital skills. This year, for instance, chairs were made for the Design Expo in Milan, commissioned by a renowned European design house. And soon a TV episode of *Salvage Hunters* will be visiting Paul to identify wood used in the making of an unusual Windsor chair.

For the moment, though, in April *Quercus* acted as a wall-some fly on a Make a Windsor Chair course for a week, alongside nine participants, Paul and his assistants Ben and Harry. The students include Martin Colledge, who is staying in a shepherd's hut 10 miles away, cycling to 'school' every day, without a lunch box as Westonbirt Woodworks provide all one's eating needs, except for exotic snacks students bring, like the delicious flapjacks made by Caroline Meakin, who is an uphosterer near Bath.

There are two key types of Windsor chair

The Arboretum and Paul transformed a building site into a yard for Westonbirt Woodworks, down below the Tree Top Walkway. Paul had already been running courses in the nearby forest and demonstrating at shows (right)

Woodworks
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one can build. If you've made one already, as was the case for teacher Gwilym Batcheler and Peter Black, you can go off piste and make a chair of other designs, while the comb back and bow back are the standard for beginners.

Like us all, Paul Hayden was once a beginner, working on a pole-lathe in his Somerset shed. "I saw a guy at a market with a pole-lathe," Paul, who was then a social worker, remembers. "It was the most fantastic thing. I'm quite impatient so a round tenon hammered into a round hole is lovely. It's instant, and you can make chairs out of firewood. Social work is quite heavy stuff. The nice thing about having a hobby like this is I could spend an hour in the shed, lose the day, and then go and put my kids to bed."

He'd become a social worker by a circuitous route, leaving school with a mind to be a priest. So he spent two years in a Guildford [Surrey] seminary, failing to complete the six-year commitment, then tried again at a monastic community in France, alongside 100 monks from 60 nations. "This idea of celibacy was a stretch, and then I started a career in social work." That began with a spell for the Royal National Institute for the Deaf, and then at residential children's homes, which, he says, were no place to bring up his own two sons. Managing a day centre for people with mild learning difficulties looking for jobs was more appropriate, and it was then that Paul could be found in his shed after work.

Early High Chairs

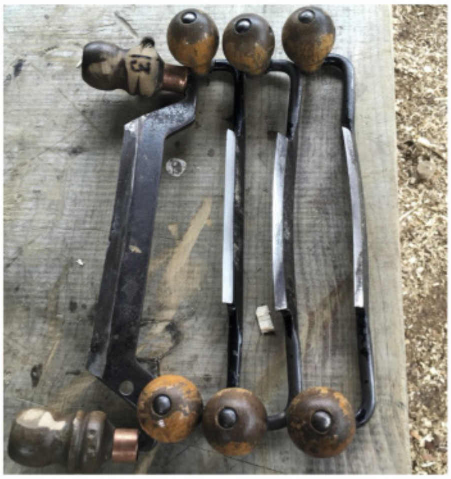
An early chair was a high one for his boys, then friends asked if they could have one too. "It just sort of grew." Eventually he took the brave step of leaving his job to make and sell chairs, taking a table in marketplaces and at country fairs, with which came complications. "There was no Internet then, no YouTube and not even many books, except those by Mike Abbott and Jack Hill." Paul contacted Mike and went on one of his courses. "Solving problems was pleasing, but I was entirely self-taught and Mike's course was a really good foundation."

One day he was reading the *Good Woodworking* magazine Letters pages, and everything changed. "This youngster had written in asking: 'I want to make a rocking chair. Have you got any tips?' John Brown wrote back and said: 'If I were you I'd find a rocking chair and copy that.' That's not quite what a young woodworker wants, so I wrote in and said: 'That's slightly disappointing. There are things that help for the making of a rocking chair.'" With Paul living near the *Good Woodworking* offices in Bath, Phil Davy, the editor then, got in touch. "They said that you look interesting, and asked if they could come out to do a workshop profile."

Articles and Demos

One thing led to another and soon Paul was writing articles, and demonstrating on the magazine's stand at shows, showing how to use a pole-lathe beside John Brown, who was writing his *Anarchist Woodworker* column in *Good Woodworking*. "At the end of the show," Paul says, "John said 'I hate those things', referring to the pole-lathe. But you're as good on that as anyone I've ever seen.' That was high praise from John." They had a good time together, despite Paul being what John referred to in his *Quercus* outline as 'a beardy weirdy'.

"He was so funny. He would be so rude. He was fantastic. I loved him. He had this Anarchist Tool Chest, and if he liked you he'd let you look inside, and if he didn't he wouldn't. I did once famously tell him that a metalworking file wasn't a proper woodworking tool. He got very snooty about that and wrote about me in the magazine as a young upstart."



When Paul found an old French drawknife (left, above) he designed three of his own, with the distinctive round handles, and had them made as a set (on the right, above)

While writing for *Good Woodworking* Paul designed some tools of his own, which he wrote about and he was then selling them through the magazine. He had straight and then convex and concave drawknives made in France, to a design based on small French ones with little round handles, which Paul had accidentally discovered when he was making his own blades from old leaf springs. "I didn't have to do anything. They [a tool manufacturer in France] were just making them to my design. We had sets of three, and sold about 2000 in the first three months."

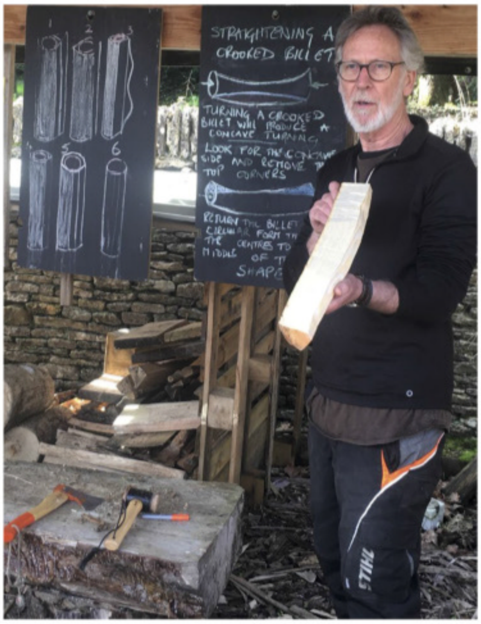
Taking to Courses

Things began to take off, and Paul would be asked to write an article on steambending, an article about sharpening an adze, an article about using a scorp, another on the difference between a scorp and an inshave, and things like that. "So then I phoned Mike Abbott and asked if he'd mind if I ran some workshops. 'Basically,' I said, 'they would be a copy of your course. People want to learn how to make a shaving horse, and they want it to be the shaving horse you taught me how to make. Would you mind?'" Mike, being the kind man anyone who knows him well knows, said that's fine, so long as his name was credited.

Mike was by then making Clissett frame chairs, with rushed or woven seats. He'd send Paul anyone who wanted to make a Windsor and Paul could send him those hoping to build a ladderback. Windsors, Mike warned, and our nine students on their first day were about to discover, are

Preparing to the Billets

To state the obvious, not all logs can be straight, and though the Westonbirt ash is good, there will be crooked pieces. The more accurate you can split and cleave the wood, the better it will be for turning. Paul starts Day One by showing how to cleave a log, explaining that before a crooked billet goes to the lathe it must be straightened by paring with an axe or using a drawknife.


STRAIGHTENING A
CROOKED BILLET
TURNING A CROOKED BILLET WILL PRODUCE A CONCAVE TURNING
LOOK FOR THE CONCAVE SIDE AND REMOVE THE TOP CORNERS
RETURN THE BILLET CIRCULAR FORM THE CENTRES TO THE MIDDLE OF THE SHAPE
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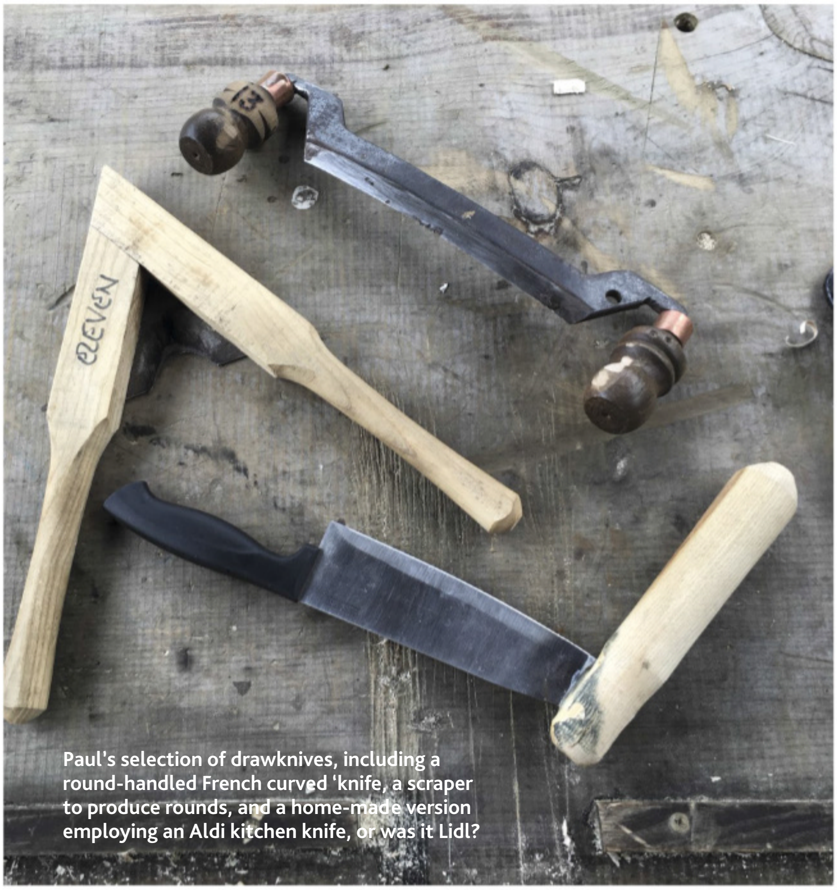


Paul's selection of drawknives, including a round-handled French curved 'knife, a scraper to produce rounds, and a home-made version employing an Aldi kitchen knife, or was it Lidl?

a bit hard to make. Then the courses, and articles and tools were doing well when Westonbirt Arboretum read one of Paul's pieces and asked him to demonstrate at a new woodworking show (which becasme Treefest) they were planning. They learnt that Paul was running courses and asked him to hold some for them in some old buildings at the far end of where the Tree Top Walkway now lies.

"Because Westonbirt has its own marketing team and so many visitors it was just a gimme really. I've run courses in the Arboretum ever since." An open wood-framed barn was then built deep in Silk Woods, where for several years Paul ran his courses. Not so far away, a hidden old plant centre became a construction site when the Walkway was being built.

"Once that [the Walkway] was opened a muddy hole was the view from up there," says Paul pointing up to the bridge. "I said I think you can do something interesting down below. A shop, a workshop, a sawmill and run some courses. So they bought a sawmill and spent a fortune on the buildings. They've been brilliant and I've been there for seven or eight years now."

Arboretum Cleaving

A Windsor Chair Making course at the Woodworks starts with a log. The wood comes from the Arboretum as roundwood or as boards which are milled by the sawmill funded by the Friends of Westonbirt Arboretum. That had been founded in the 19th Century by Robert Holford, who owned land in the area, adding formal gardens, including an arboretum, during the rebuilding of Westonbirt House. According to the Forestry Commission, it was fortunate for Holford that the Victorian era was a time of great excitement in the plant world, and plant hunters were bringing species from all over the world.

"Holford financed plant collecting expeditions all over the world, on a quest to find the rare, the beautiful and the extraordinary, and the Arboretum still contains many of the original plants brought back from these trips.

"By 1855, much of the Old Arboretum had been laid out, but from the 1880s, Robert became too elderly to continue his work in the arboretum, and the dominant figure in the arboretum's development became his son, Sir George."

George expanded the arboretum across the valley into Silk Wood, which can be found by crossing the Walkway that looks down upon the Woodworks yard.

Sir George left no heir when he died in 1926 and in 1956 the entire 600 acres (240 hectares) were handed over to Forestry England, who had the huge task of making it openly available to everyone who wished to see it for the first time.

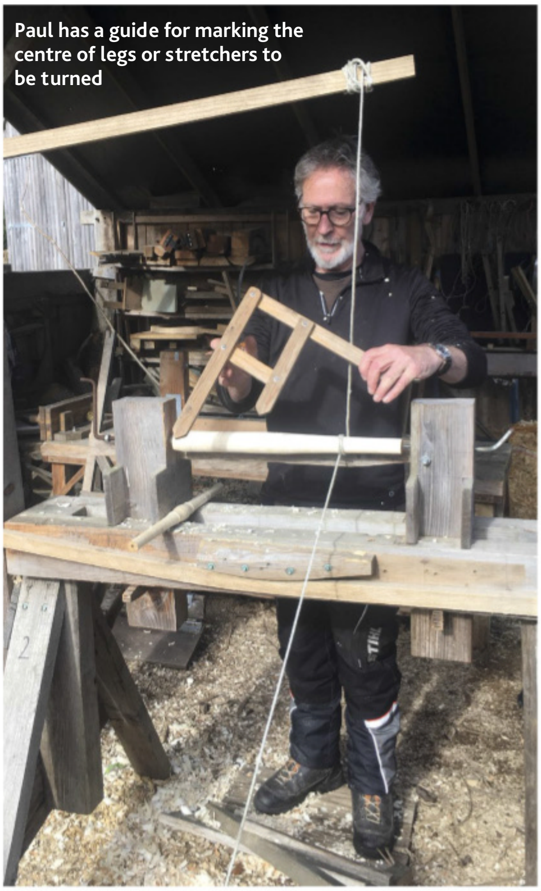
Westonbirt is now named The National Arboretum, known above all for being a tree collection of native, rare and endangered trees and for the propagation and conservation work, plus the live music; the autumn tints; and naturally for the Windsor Chair Making courses at Westonbirt Woodworks.

There, on Day One of our early April six-dayer billets have to be cleft ready for the pole-lathe, waste being removed from the split pieces on a shaving horse with a drawknife. Day One is all about learning new skills, with an axe for cleaving, a drawknife for rounding on a shaving horse, and finally the pole-lathe to turn stretchers in time to be slipped into the kiln.

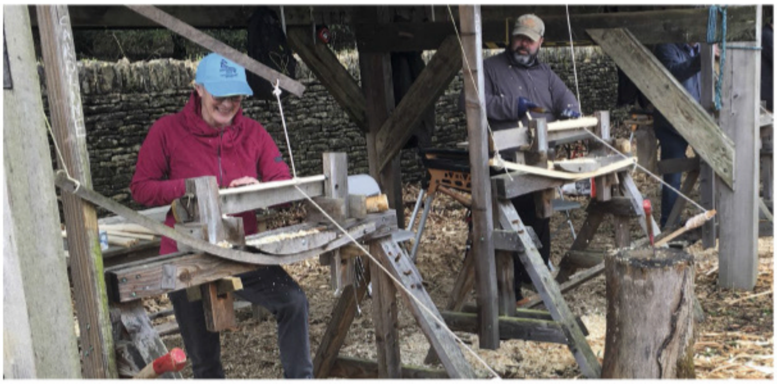
Cleaving billets and sitting at a shaving horse with a drawknife are relatively simple skills for even a newcomer, but the pole-lathe is an altogether different beast. As most readers will know, it works with a long, sprung wooden rod, or pole, attached to a foot treadle via rope, which is wrapped around the blank. The turner loops the rope

Learning to Turn

Once the billet has been prepared, students have their first go on the pole-lathe, to make the three stretchers, ready to go in the kiln by 5pm for drying. This is quite a day, especially when it comes to turning for the first time as the stretchers, legs and spindles will be pivotal when they are removed from the kiln (right) for assembly at the end of the week.



Paul has a guide for marking the centre of legs or stretchers to be turned



Caroline and Jon banter and smile at the pole-lathe. This is Day Three, with Caroline turning a spindle, with the wood about to wobble. She may have to run her hand round the spinning blank to keep it calm around the wood with a couple of coils, then fixes the workpiece between centres and uses a foot to spin the wood towards them as they push. That's when you cut, then you wait for the treadle to spring back up, ready for your next step. Looping is tricky enough, so easy is it to have the wood spinning the wrong way. Actually, the lathes at Westonbirt Woodworks don't feature traditional poles, and are instead designed with a pivoting arm, which is sprung by a piece of bent wood. These take up less space in the yard and are easier to manage for consistent teaching, and are pedal-powered machines that can fit in a small space.

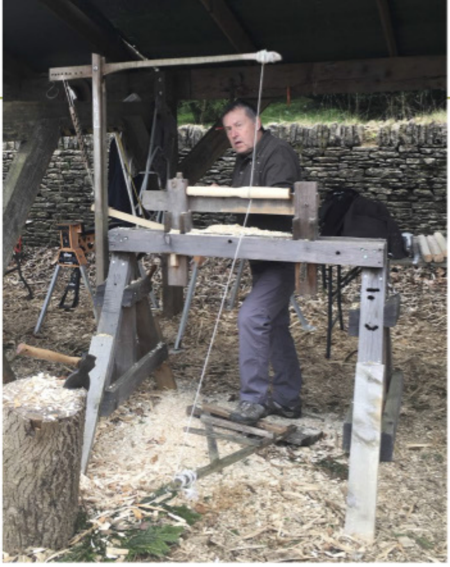
Learning to Turn

Jon Beamish, one of the new 'chairmakers' who lives not far from Westonbirt, confirms this: "I have a small wood station in my garage at home at the moment, with a folding tablesaw, a bandsaw, a sander and a pillar drill, and the stuff that's useful for normal DIY. But one day, I should very much like to have a workshop again, with at least enough space to have both an electric lathe and a pole-lathe."

Even so, some fellow students take up Paul's suggestion that the spindles for the back are from coppiced hazel rods. These are chosen from a large stock produced beyond the Tree Top Walkway by Brian Williamson, who has been restoring neglected coppice woodland in Westonbirt Arboretum for 20 years. The handful of students who take the short walk across the valley were shown how he produces charcoal, shingles and bean rods, and returned with an armful of spindle-stock.

One advantage of choosing hazel for the back spindles, apart from the rustic look, is that you don't have to turn anything long and thin on a pole-lathe. This is done on Day Three and calls for the added skill of wrapping one's fingers around the spindle to calm any wobble. That's not to say you don't have to become 'proficient' turners because on Day Two everyone turns their legs and perhaps even steambends a bow or comb in the afternoon. When one student bends the rest tend to gather to watch and in case they are called to help.

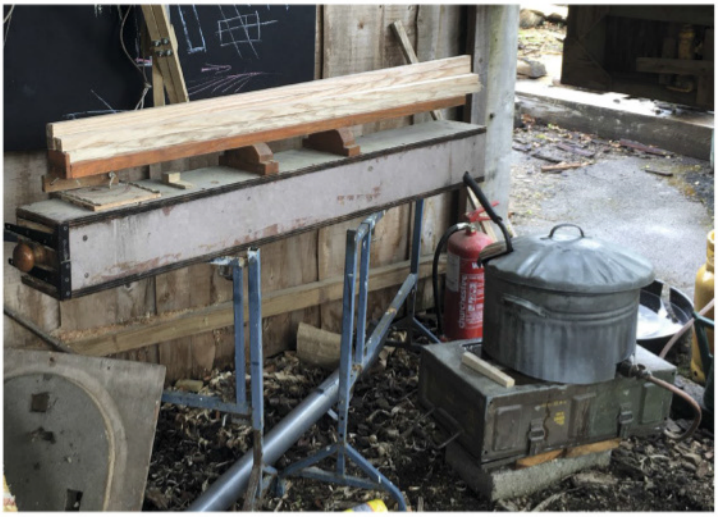
Turning each leg so that one end can fit tightly in the seat hole is essential. You don't want to end up with legs too short or you might be building a kneeler. The end must be neither too thick nor too thin for the tenoner, and either callipers or a spanner are used to check the diameter. "You can't lock the callipers," explains Paul, "and they bend and twist in the hands of the unwary. The spanners are more robust."

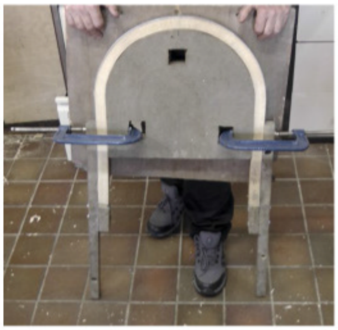

It's leg-turning on Day Two with Neil

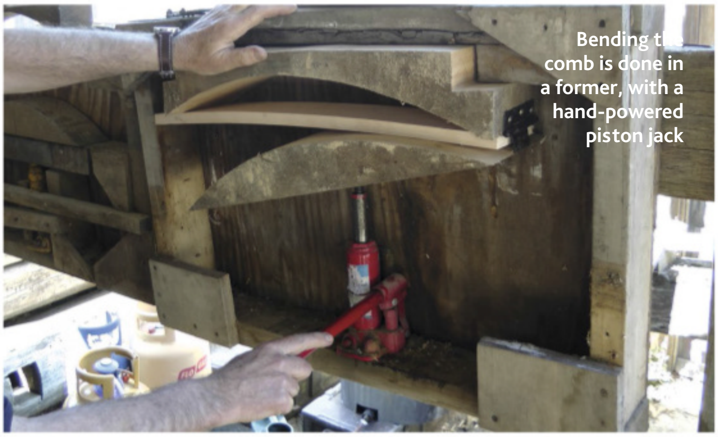
Having found the first day relatively simple, learning to split and prepare billets, and then to turn the three stretchers on a pole-lathe, Mike Harvey hit a bit of a wall

Steambending Combs, Bows & Arms

Steambending takes place from lunchtime on Day Two (Tuesday) till the end of play Day Three (Wednesday). Strips of ash for bending are soaked in a trough and then have to be planed by students ready for bending. Steam is produced from a Jerry can on a gas hob, protected by the top half of a dustbin (right and below). The steam box (bottom) comprises insulation around a plastic soil pipe. There are no pegs or stickers to separate the lengths for bending as some chairmakers favour. Bending is done with a metal strap reducing the risk of tear-out






Bending the comb is done in a former, with a hand-powered piston jack

when it came to the legs on Day Two. He felt satisfied by the end of Monday (Day One), but Tuesday didn't go so well. He hit what Paul describes as the 'slump'. "The legs needed to be as similar as possible, and the logs, we were warned, were not going to be quite as compliant as yesterday's," Mike, who works, semi-retired, for a product design business, now says. "My first three legs went well, then number four was a swine. Over-confidence played a part and I started turning a blank that wasn't quite straight enough. Lesson learnt, I discarded it and started over again, just managing to get four legs done by the 5pm deadline. I was very tired and somewhat less confident."

Board of Directions

All the diameters and lengths of components are shown on chalk boards inside the largest of the work areas, where most of Paul's teaching is done and where eating and drinking is enjoyed, and where there is always a tin of biscuits, plus those extra delicacies brought in every morning. Brewing tea and coffee is very much DIY, with a kettle always hot on the stove.

"You can play with decorating the legs if you wish," Paul says, "but it's the architecture of the chair that makes it appealing; the shape when it's finished. It's not very much to do with the bumps, lumps and twiddles. These days people like to taper the legs up from the ground up, thinner at the top, as if it is somehow growing out of the ground, because that's the shape of trees, which are fatest at the bottom. There's a nice organic look.

"Or you can have the legs tapering down into the ground, in the really nice 1960s Jean Shrimpton look. What we're not going to do," says Paul, "is have the legs going all the way through the seat. You get a circle with a lovely dark wedge, which is beautiful, but if there is a mistake it is hard to correct."

Paul's teaching is captivating. He somehow combines instruction and humour. "We are teaching real skills, but we also make sure the courses are always fun and relaxed." He is a natural teacher. "As soon as I'd solved a lot of problems making chairs I found that more of the same didn't interest me very much. Teaching is something else. Teaching is social. And it's communal and it's difficult. You are teaching people difficult skills. They see you and think it is easy, and then you have to get them through the slump when they realise it isn't at all. And I work with fantastic young people."

Making a Dream Chair

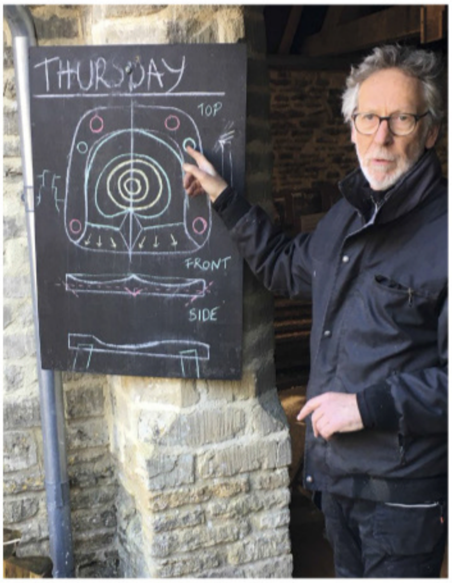
The skills are all the more difficult because, as Mike Abbott warned, Paul only makes Windsors. "I lived in France for a long time and it's all very well having famous paintings of them, but French rush-seated ladderbacks are so uncomfortable. A really well made Windsor chair in form and function is perfectly, perfectly, exquisitively aligned. You can see at a glance that if it looks right it is right. If it looks wrong it is wrong.

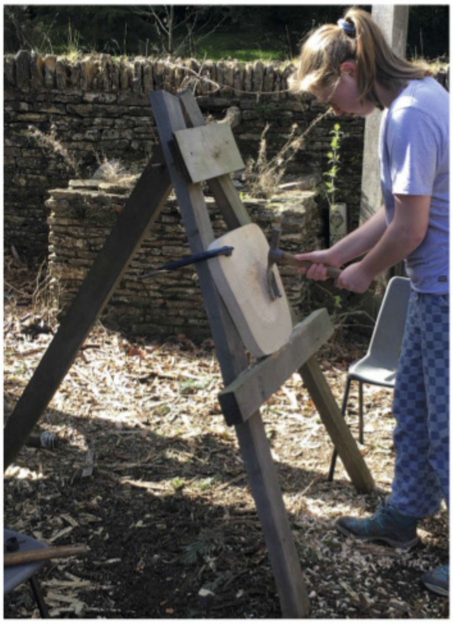
"We tell people that they are never going to make their dream chair on their first course. It's skilled, and those sorts of skills are going to be difficult to acquire. We will push you as far as we think it's reasonable to push you, depending on your fitness and your understanding of the technology."

Once the leg turning is done, the straight

Adzing and Bottoming

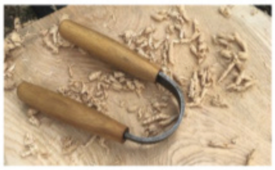
Day Four (Thursday) and it's time to leave the pole-lathes and learn how to use an adze and travisher to shape the seat. There is a board to show where to reduce the thickness of the wood, both in plan form and elevation. This is a guide to which students can return frequently to judge the quality of their carving. Adzing is made much easier, says Paul, if the tool is designed properly. When you hold the handle you forefinger must point towards the edge at right angles (right) for the best swiping arc that neither digs in nor bounces off the surface.

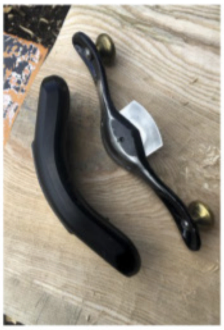




Dividers being used to mark out the seat symmetrically

India (above) using an easel for removing waste with an adze. Then you will use a travisher or hollowing tool (right) or a scorp (below)





lengths of green ash need to be planed smooth before being put in the steam box. The general rule is that one hour is needed for every 1in thickness to be ready to bend. A metal strap helps reduce the risks of splitting when the steamed piece is bent around the former, but it's still a spectator sport with no one (not even Paul and his assistants), ever quite sure what might or might not happen next. "Steambending is just magical," Paul says. "It opens up so many possibilities for someone who isn't really that creative. I'm a maker much more than a designer."

Welcome Bottoms

The first three days are by far the most challenging, and the most exhausting with students learning so many new skills, particularly the turning, which is physical as well as testing one's spacial awareness. It's a bit like tapping your head and circling your hand on your stomach.

On Day Four you 'bottom' the seat. After a short talk, one of Paul's blackboard drawings offers plenty of instruction and reminders for laying out the shape, depth of cut and relationship between the holes for the back and legs and outline of the carving. Though Paul emphasises the importance that his courses are "fun and inclusive", this is a week for participants to challenge their abilities. "This is a grown-up course for grown-up people," he says. Hence the boards are designed to encourage beginners to make their own decisions and discover their own abilities, and keep Paul and his assistants sane and relaxed for all of the six days, or at least for the first five.

Once the fourth day is over, and the seat has been carved, scraped and sanded with the yard more peaceful than before, things hot up again with the drilling of the seat for the legs and the assembly of the 'stool'. Finally you can see how your chair is progressing and how it might end. Having left most of the turning and seat shaping to the students themselves, encouraging them to visit the blackboards to check any details, it is at this point that Paul, Ben and Harry employ inventive jigs to drill holes at the right angle and cut tenons accurately and the right length.

It is to conquer these most critical moments that chairmaking teachers (and professional chairmakers themselves) invent devices to simplify drilling and tenoning. Elsewhere this issue you'll discover how Chris Schwarz puts a carving vice (better known as a pattern-makers vice) at 270^0 to the end of his bench in the workshop, so a rail can be tenoned from both ends with the piece levelled once.

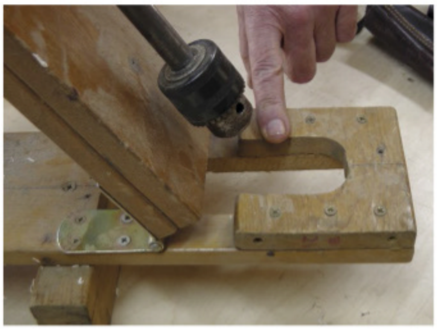
Paul's assistant, Chrissy, sets up an assembly table on the final day to help students like Mike glue-up his bow back with hazel spindles

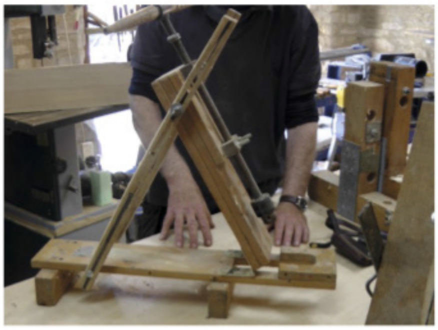
Saturday Teatime

At Westonbirt Woodworks, by Day Five tutors are taking slightly more responsibility for the making of the chair, enthusing students to grow their design, while ensuring they cross the line by teatime on Saturday, relaxed and rewarded. The bows and combs and sticks

Jigs & Devices

Things hot up on Day Five when students are having tenons cut on their legs. Most (but not all) chairmakers have jigs to simplify making, and in Westonbirt Woodworks' case there is one for using a tenoner for stretchers and legs (below), plus an angle drilling jig for the leg mortises in the seat (right). There is an extended arbor for drilling the back, using an auger bit for controlled alignment





are glued together with PU adhesive, which does a bit of gap-filling and goes off quickly after foaming. Many will argue, understandably, that traditional hide glue is better for assembling a chair, offering an easy open time (neither slow nor instant) and the invitation that furniture can be dismantled long into the future. Urea formaldehyde, best known as Cascamite, also has gap-filling properties and plenty of time for assembly, but goes off very slowly and is brittle and horrible to clean up with scrapers and sandpaper afterwards. Then there's PVA, which is the most familiar for beginners, but grabs too fast.

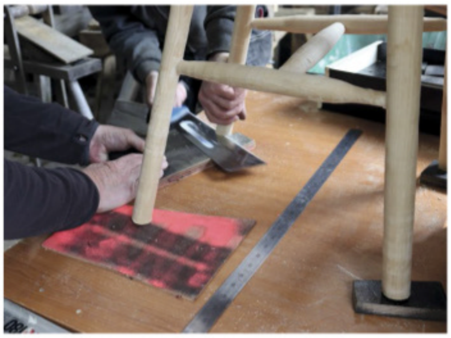
And so it is that after six days together, the graduates can line up behind their chairs, enjoying the time spent with strangers who are friends by the end of a week, but may never meet again. Chairs are taken home to be oiled, varnished or as they are. Rarely do these satisfied beginners make another chair at home, but a fair number return for another therapeutic week in the Woodworks yard and join the widening world of what might be called a Short Course Revolution.

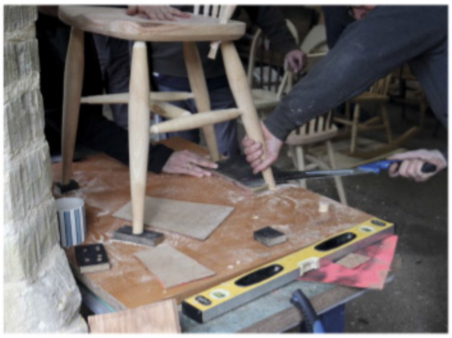
For details of Westonbirt Woodworks courses visit westonbirtwoodworks.co.uk or follow @westonbirtwoodworks.

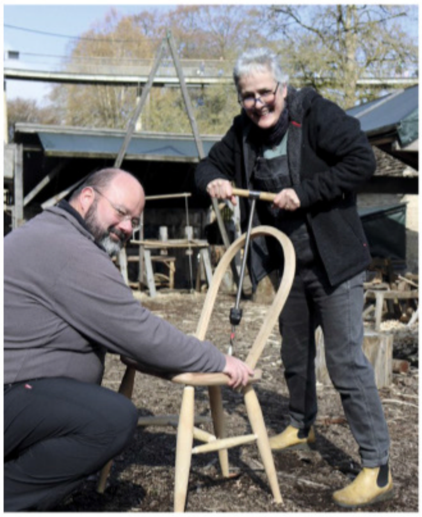
India works for Dyson in Malmesbury and her bow back is the second chair she has made, while Mike (right) gets all Christine Keeler on his completed chair with hazel spindles

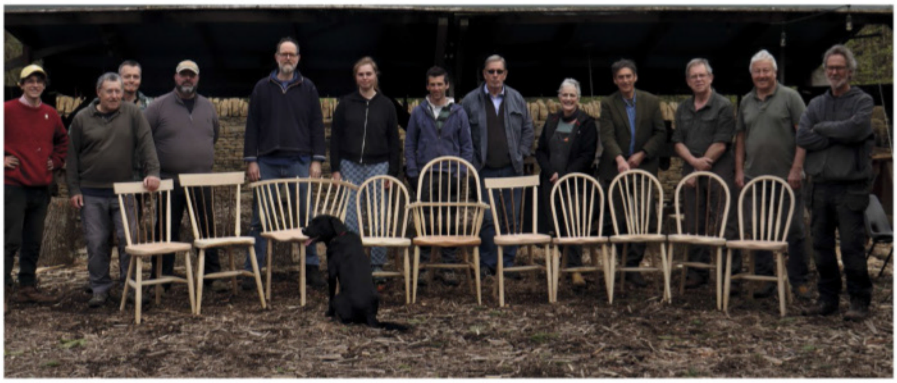
Assembling & Levelling

By Day Five the 'stool' is assembled and ready for the back and/or arms. Drilling for the spindles is done with a chuck clipped into the end of an arbor, which is turned with handles, as demonstrated by Caroline and Jon (below). The final process, as deadline approaches on Saturday, is for Paul to level the legs using colour-coded blocks (right)









From left: Harry (Assistant); Neil (comb back with hazel spindles); Ben (Assistant); Jon (comb back with hazel spindles); Peter (corner chair); India (bow back); Gwilyn (bow back with arms); JJ (comb back with hazel spindles); Caroline (bow back); Nick (bow back); Mike (bow back with hazel spindles); Martin (bow back); Paul (Sir)

PEOPLE & PLACES

Voices

Loving New Letters

Correspondence with *Quercus* comes now in a new form. Welcome to the world of online Letters

There was a time when the success and value of a magazine was measured by the sack of letters it would receive from readers, the publication being considered a club. Then there was the time when readers would respond to emails requesting information, opinion or advice regarding a specific issue or question. For us this now happens through the comments made on Instagram and Facebook connected to *Quercus* posts.

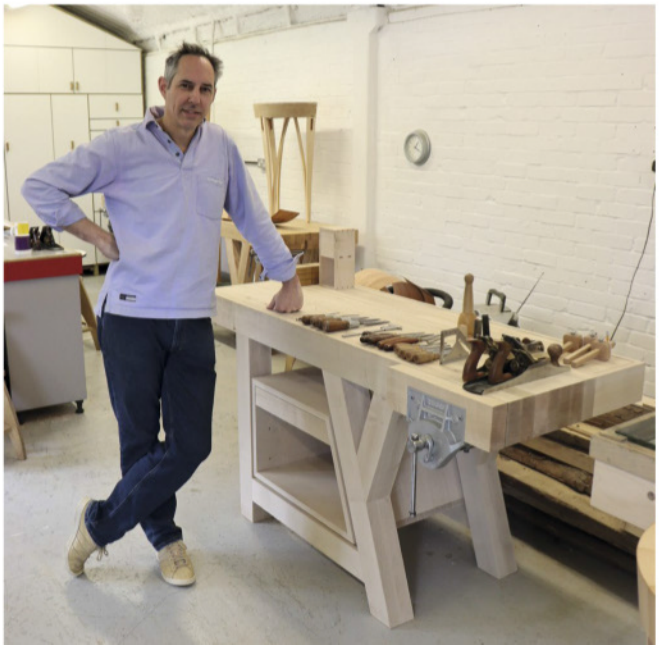
Take for instance the day we posted an image of a bench we are buying from Ian Parker (@ianparkerstudio). Ian designed and made workbenches with an innovative design for furniture-making courses he has been running. One end appears extended with a Y-shaped underframe, and we've always wanted to fit a bench vice on the right-hand end of a workbench, and hence were tempted by the one Ian laid out one in exactly that manner. So we posted a question asking followers how they consider this layout.

The first responder was @elliot_jokelson who wrote that they "would love to see it with a pattern-maker's vice". By way of coincidence that is exactly what we have been trialling on an old bench, aware that drilling a new benchtop is an action one might regret. Then @carvingscotland envied our purchase commenting: "That's a clever idea. It would have been perfect when I was making lots of chairs." Our own regular correspondent, @thekilted woodworker is envious: "That looks really cool and useful. I'd love to have room for two benches in my shop. Is it for a left-handed person? Or is the vice on the right a British thing, like driving on the wrong side of the road?" Well Ethan, hopefully your questions will be answered in the next issue of *Quercus*, once the bench has been delivered, but it would appear not to be a common British approach, in fact we have found very few examples in our travels around workshops. It may turn out to be a big mistake. By hey, 'No guts, no glory', only time will tell. @jeremy_broun_woodworker isn't so keen about the Y-configuration frame design: "I don't think I am misguided to suggest that a vertical support is stronger than a Y-section in load because where there is a joint there is weakness," to which Ian Parker responded that the bench is designed specifically for novice woodworkers, with the Y-section outperforming any other bench he has designed, and aiming to make the bench affordable, the reconditioned Record 521/2 vice can be bought on eBay by anyone. Fortunately @myloveletter togoodhours considers the bench fun, and @winezzzs a "great design".

Pattern-makers Vices

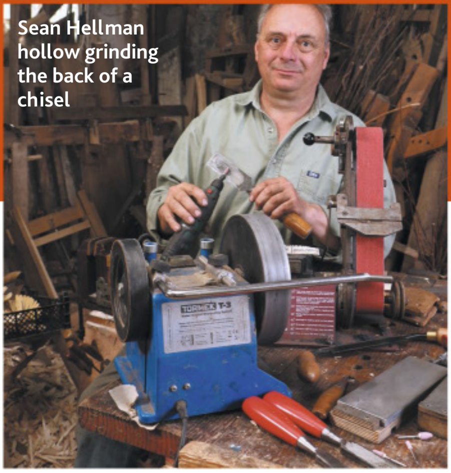
On the topic of pattern-makers vices, when we asked where to locate a carvers vice on a bench, as raised by @lostartpress in a recent blog, @adrift_in_the_wood says they have already found a place for theirs: "I have mine locked into my Superjaws in the middle of the workshop floor. It makes accessing and moving around what I'm working on so easy and it's quick to take away when demonstrating."

The comments to Sean Hellman's hollow grinding of chisel backs, which



Where to Put Your
Carver's

Ian Parker designed and made the unusual bench *Quercus* has purchased, attracted by the over-hanging end, Y-shaped underframe and right-handed bench vice (left). On that point we've tested where to drill our old bench to fit a pattern-makers vice (above), as debated in a blog by @lostartpress



Sean Hellman hollow grinding the back of a chisel

he introduces this issue, received some negative replies. For example @periodcraftsmen says the technique is “not recommended whatsoever”, while others were unnecessarily rude, but a few support the approach, like @huntley.haverstraw who has a new chisel ground in exactly Sean’s way: “Funnily enough my absolutely best chisel, as far as a perfectly formed hollow on the back, is a relatively modern Marples with a rubberised handle stamped ‘Made in Sheffield, England’. It gets remarkably sharp, and is a joy to sharpen, but the plastic and rubber handle is not very attractive.”

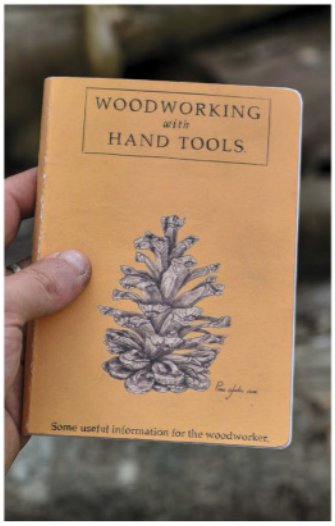
Finally we posted a reel showing @benwilliswoodcraft using a bespoke chair leg drilling gadget, the EZ Rung made by @ctregan_, which we’ll be exploring next issue, which @dirtylegcraftsman considers “cool”, @turningwilde says is “supercool” and @hamclarty adds the jig is “slick”. Alongside the string of “clevers” and “how do I buy one?”, there’s @stkrakker who jokes that it “takes all the fun out of rubber bands and laser levels”.

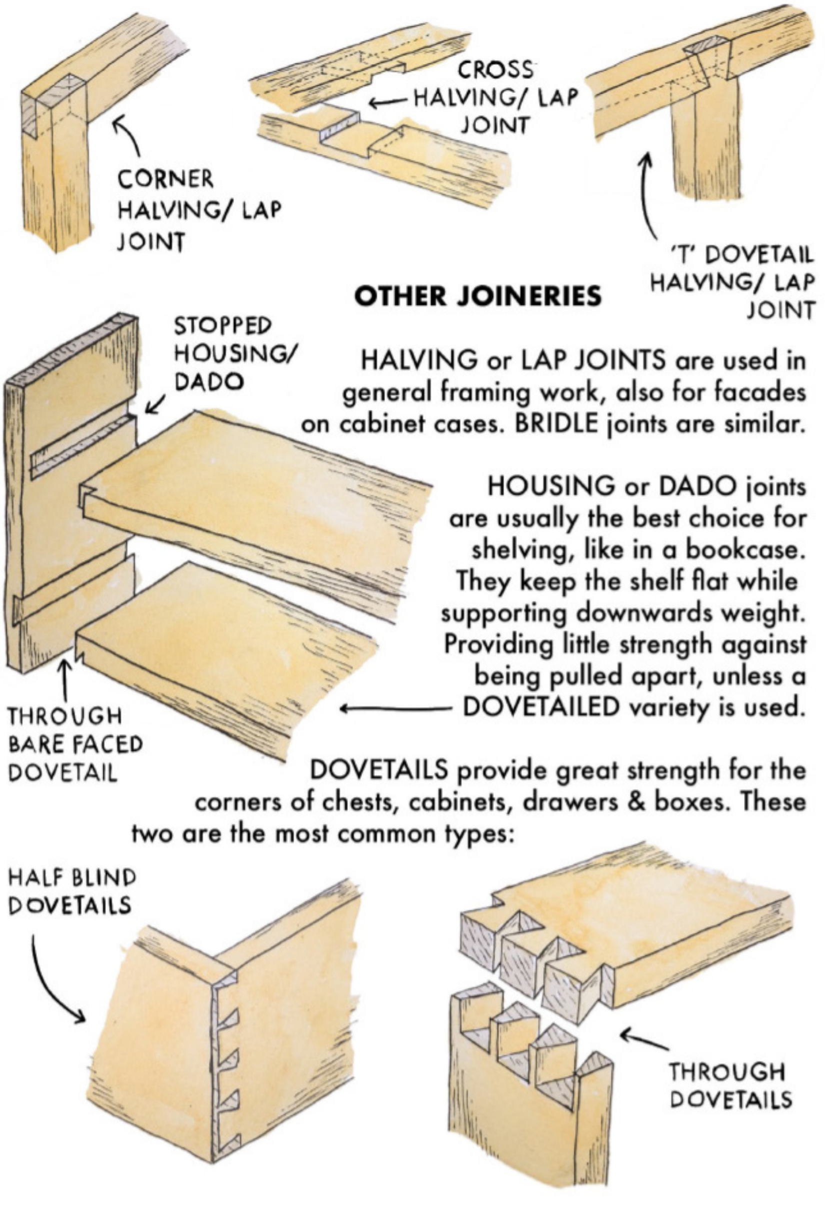
Next issue we ask @benwilliswoodcraft how he finds the EZ Rung designed by @ctregan_

Harry’s Hand Tools

In Lockdown 2020 Harry Morris, a furniture-maker & teacher living near Bristol, began doing watercolour illustrations of his tools, as handouts for students on courses he runs. The drawings became a beautiful small book, printed locally by Meticulous Ink in Bath. “This booklet is intended to be key information for the beginner and a series of useful reminders for more experienced woodworkers,” he says.

Orders for the second printing of Woodworking with Hand Tools*, by Harry Morris, are open till the end of July. After that orders for commissioned copies are likely to take four weeks to be printed. The book is 40 pages and A6 (105-148mm), and costs £22 inc.p&p in the UK. For details visit htmorris.com.*




CORNER HALVING/ LAP JOINT
CROSS HALVING/ LAP JOINT
'T' DOVETAIL HALVING/ LAP JOINT
STOPPED HOUSING/ DADO
THROUGH BARE FACED DOVETAIL
HALF BLIND DOVETAILS
THROUGH DOVETAILS

OTHER JOINERIES

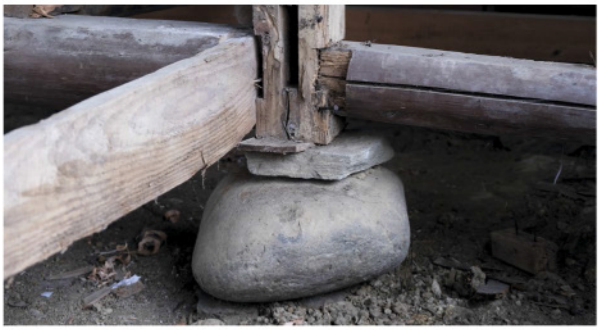
HALVING or LAP JOINTS are used in general framing work, also for facades on cabinet cases. BRIDLE joints are similar.

HOUSING or DADO joints are usually the best choice for shelving, like in a bookcase. They keep the shelf flat while supporting downwards weight. Providing little strength against being pulled apart, unless a DOVETAILED variety is used.

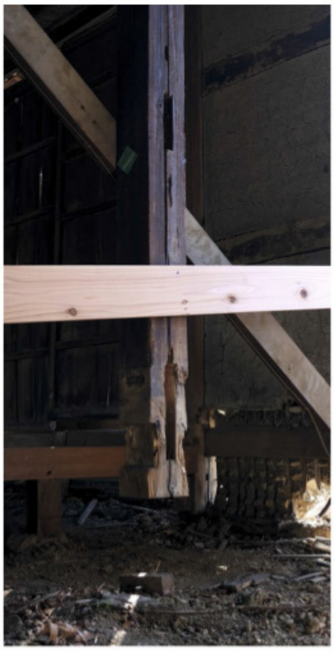
DOVETAILS provide great strength for the corners of chests, cabinets, drawers & boxes. These two are the most common types:

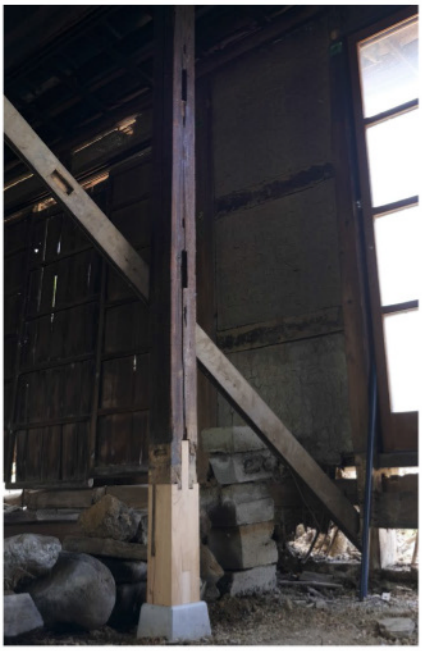
Joints in Japan

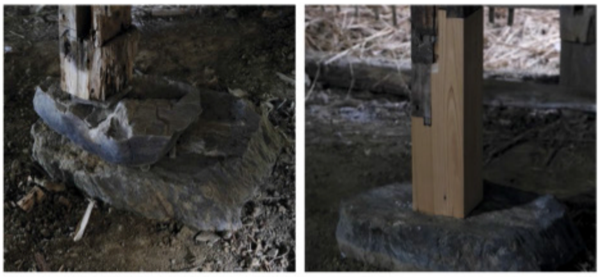
Repairing an old house, *Dylan Iwakuni* shows how damaged supports can be repaired

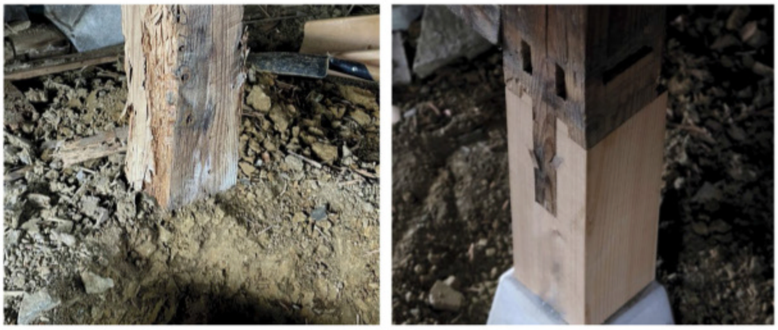


What was revealed underneath the floors shocked us (Pic.1, above). Stones were stacked on top of one another to raise the posts, due to the original stone sinking or the post being damaged and cut. Temporary supports were added (Pic.2, right) and the post was lifted up. Due to intersecting beams, the post couldn't be removed so the joinery had to be cut in this state. The first joinery is done (Pic.3, far right). The new piece was actually a re-milled old material, hence the marks from its previous life are visible. Before and after (Pic.4, below). The joinery was shaped to fill the mortise and replace the damaged right side. The foundation was reinforced and the stone base was reused. As the centre section of the wood was still usable (Pic.5, far right, below), a joinery was made using the centre. One of the unpleasant experiences of working with old materials is finding hidden nails. Even though I've checked and removed any nails, there were still a few unfortunate instances.









Removing and looking under the floors is always frightening as one never knows what to expect. With the bouncy and fallen floors, I thought I was ready for what awaited. But as it turns out, I was more surprised than I anticipated.

The house, believed to have been built close to a century ago, had been abandoned for six years. Together with the client, we started to work on renovating this *kominka* (traditional Japanese house).

As expected, there is a lack of support for the floors and damage from termites. But the most surprising were the layers of stones stacked on top of one another to hold up the posts.

My best guess as to why this happened was that the original stones upon which the posts stood had sunk over time. Or the posts had been damaged and had had to be cut, and so to raise the height of the posts, stones were stacked in between. But all is not lost as I believe the beauty of wooden structures is the ability to be repaired. As the posts have several beams intersecting, simply removing and replacing the post itself was out of the question. Therefore a method called *netsugi* in Japanese (literally translates to root joinery) had to be used.

I decided to get a little creative by observing the state of each post and repairing each one while leaving as much of the old wood as possible.

Old Mortise New Tenon

For this first post (Pics.1-3), there was an old mortise. A tenon was cut on the new piece and fitted in from the side, utilising the old mortise. A round pin was inserted from the side, locking the joinery.

The next post (Pic.4) also has a mortise, but the right side had extensive damage. Transferring the damaged section, and with some improvising, a joinery was shaped.

For the last example (Pic.5), though both sides (sapwood) were damaged, the centre (heartwood) was fine. Taking advantage of the centre section, I decided to try a joinery known as *shachisen tsugi*. It is a tenon with two wedges designed to pull the joinery together.I find repair work to be one of the most rewarding, testing your skills and creativity, and there is also the satisfaction of knowing you have provided a new life.

Most of these joinery repairs will be hidden once we install the floors. My hope is that one day in the far future when the floors are removed again, that person will be surprised as us, this time in a good way.

Aspen Wins Big Award

American chairmaker is awarded $100,000 for craft

Administered by United States Artists, the Maxwell/Hanrahan Foundation launched Awards for Crafts because craft is among the most underfunded arts sectors. The awards celebrate craftspeople and artists not only as experts within their mediums but as collaborators, educators and mentors working individually and collectively to expand the field.

This year Aspen Golann, who helps run The Chairmakers Toolbox, was awarded $100,000 as a furniture-maker, artist and educator. “Her work draws from the intersections of iconic American furniture practices, identity politics and contemporary craft,” says the panel of judges. “Reflecting a commitment to inclusive education, she has helped create new pathways for marginalised makers to engage with traditional craft practices.”

The Foundation’s funding supports scientists, teachers, conservationists and creators whose diverse perspectives are said to discover new things about ourselves and the world. “The awards recognise practitioners committed to material mastery,” the Foundation says. Chicago-based United States Artists raises funds to make unrestricted awards, and has awarded nearly 800 individuals with more than $38m of direct support.

Next issue we will be interviewing Aspen Golann and learn more about the ambitions of The Chairmakers Toolbox, the courses and programmes they promote, and the makers they support.

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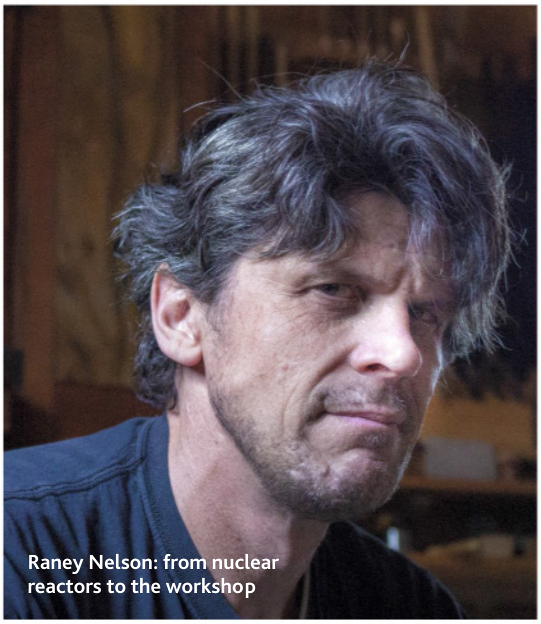
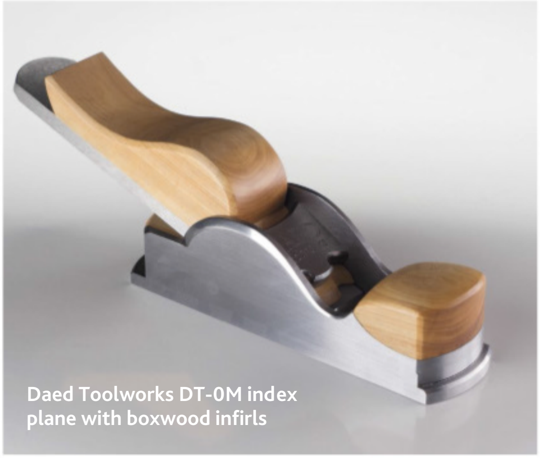
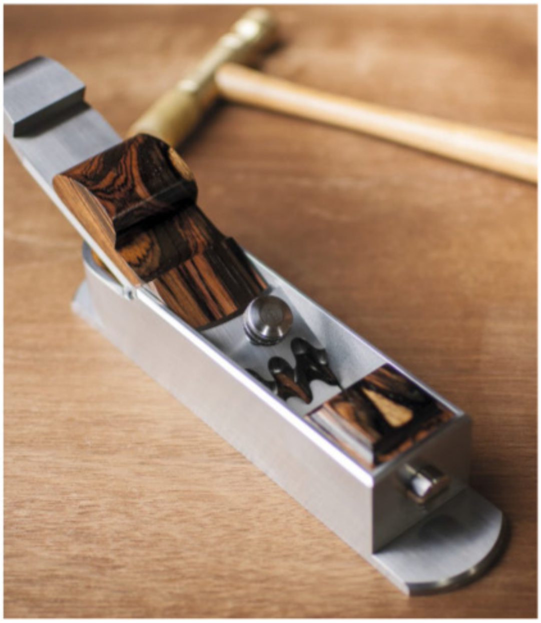
Raney Nelson

The Indiana planemaker, who started life running reactors on nuclear subs, tells *Quercus* how he now makes kits for lovers of the infill


Raney Nelson: from nuclear reactors to the workshop


Daed Toolworks DT-0M index plane with boxwood infirls


M2 Mitre plane with kingwood infills

Starting his working life, as he did, in the Navy running reactors on nuclear submarines, Raney Nelson has followed a toolmaking path as unusual as it is predictable. Once, it was retired colonels, and vicars and doctors, or perhaps attorneys like Raney's father, who would transform their hobby into an obsession and end up noted for their new-found manual dexterity and creative umph late in life. Now it's coders and analysts who spend their evenings de-stressing in the attic, then move to the basement with a growing arsenal of hand-tools, then to a single garage and eventually they buy a large house to find space for a dedicated workshop, amassing along the way enough bonuses to retire by 47. Well that's the idea for some executives.

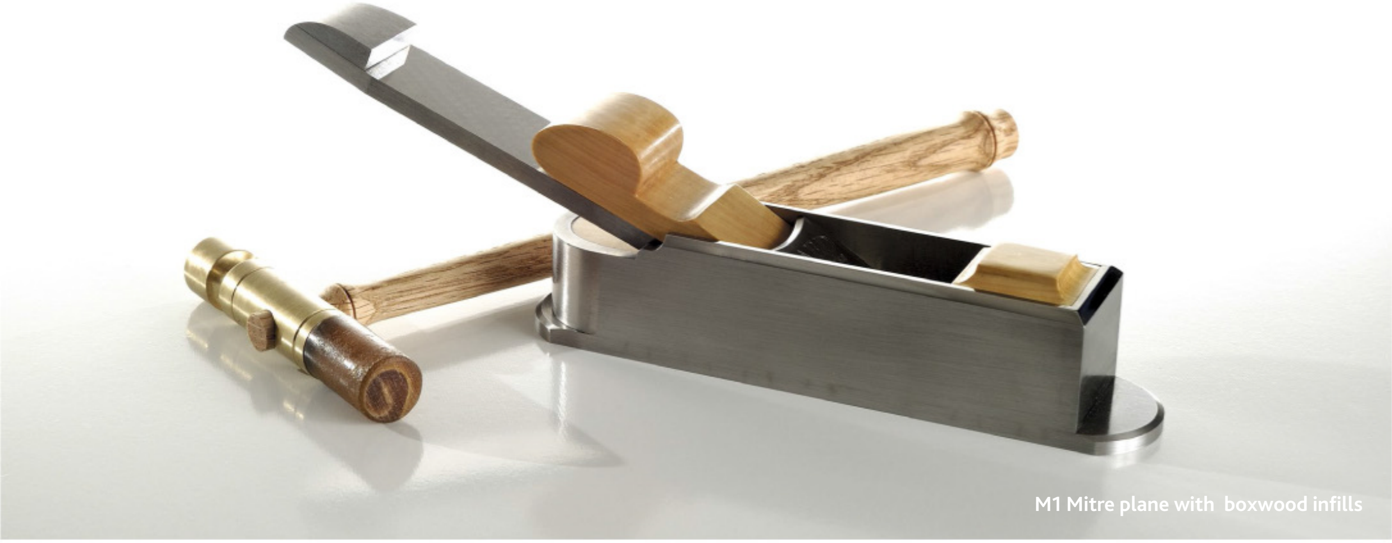
Of course, things are never that simple. After his spell in the Navy, which he'd joined to "escape childhood", Raney took a degree in quantum mechanics at tiny Portland State University, where he actually studied psychology, philosophy, literary criticism, linguistics and the softer sciences. He was drawn then, surprise surprise, into tech, each step then in the 1990s and early 2000s coinciding with dark times. "I'm part of the Generation X," he says, "and every time I hit the job market there is a recession." Computing was a great way to make money, he says, and in PR he did so until the sector tanked after the Millennium and he came to realise that he wasn't suited to the work. "After a decade as a PR guy it became obvious that my forthright nature was not an asset."

By that stage, however, he'd been making tools on the side, starting with scratchstocks and saws and things 'retired' marketeers need for making furniture when they can't afford to buy either the chairs or the chisels. Obsession turned to desire and Raney took to lusting after planes made by Karl Holtay and Konrad Sauer. He yearned for some of the action, and began making infills. "Karl is the peak, he's the zenith of technical engineering. I am attracted to that, to focus my mind on one thing very carefully, and to learn that sort of hyper-focus. Konrad remains my favourite designer. He has an exquisite design sense in line and curve." Then there is Bill Carter. "My planes are certainly influenced by his designs. He has a technical understanding of the history of infill planes and has been a spiritual inspiration."

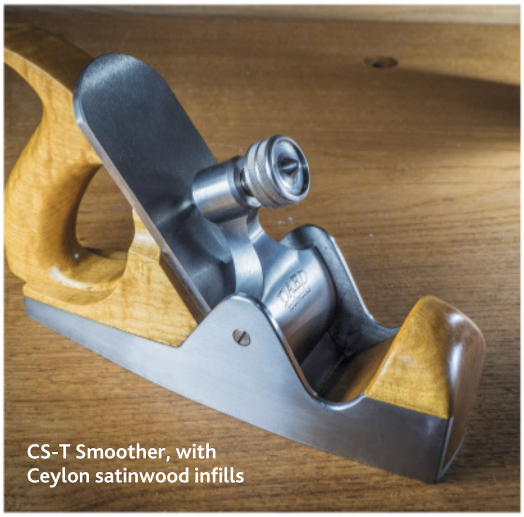
Now, having moved from a small house in one of New Jersey's most expensive counties to a larger Indiana plot, he makes kits, so other vulnerables can be tempted to cross the Rubicon, and make their own copper-sided planes. "If you make an infill plane you're either going to never stop making them or you'll never make another. I have two clients who have both bought between five and 10. I've been pushing them to make ones of their own: 'You don't need the kits anymore.'"

The sole is written in stone, Raney says when it comes to the kits. "You can do some modifications to the sidewalls, but not a whole lot." He now sells a block for user-friendly peining so that beginners see planemaking as a more approachable hobby, with unique opportunities in the choice of wood the subtleties of body shape. And when it comes selecting a species, like Bill Carter, Raney worships box. "I buy it from Turkey, from a company called Octopus, which primarily serves instrument makers. I can use it within two or three years. Otherwise it has to be air-dried for 20. If I find it, then I buy it."

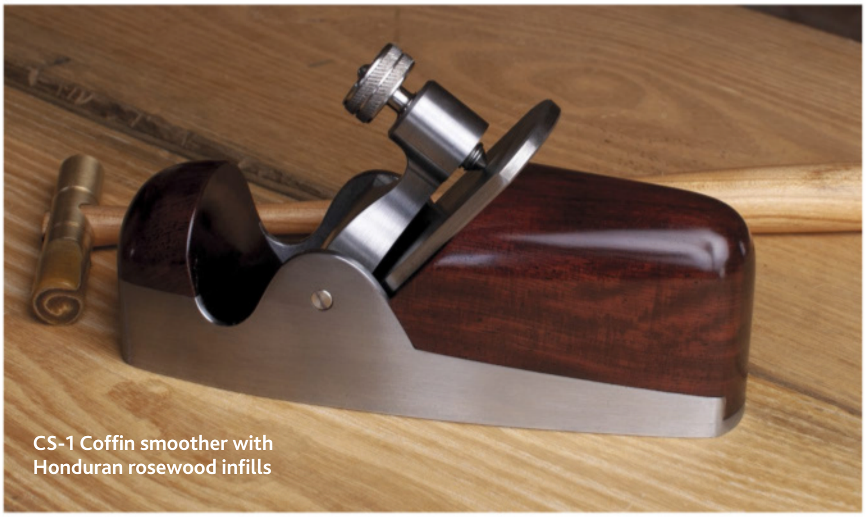
For details visit daedtoolworks.com or follow @daedtoolworks.



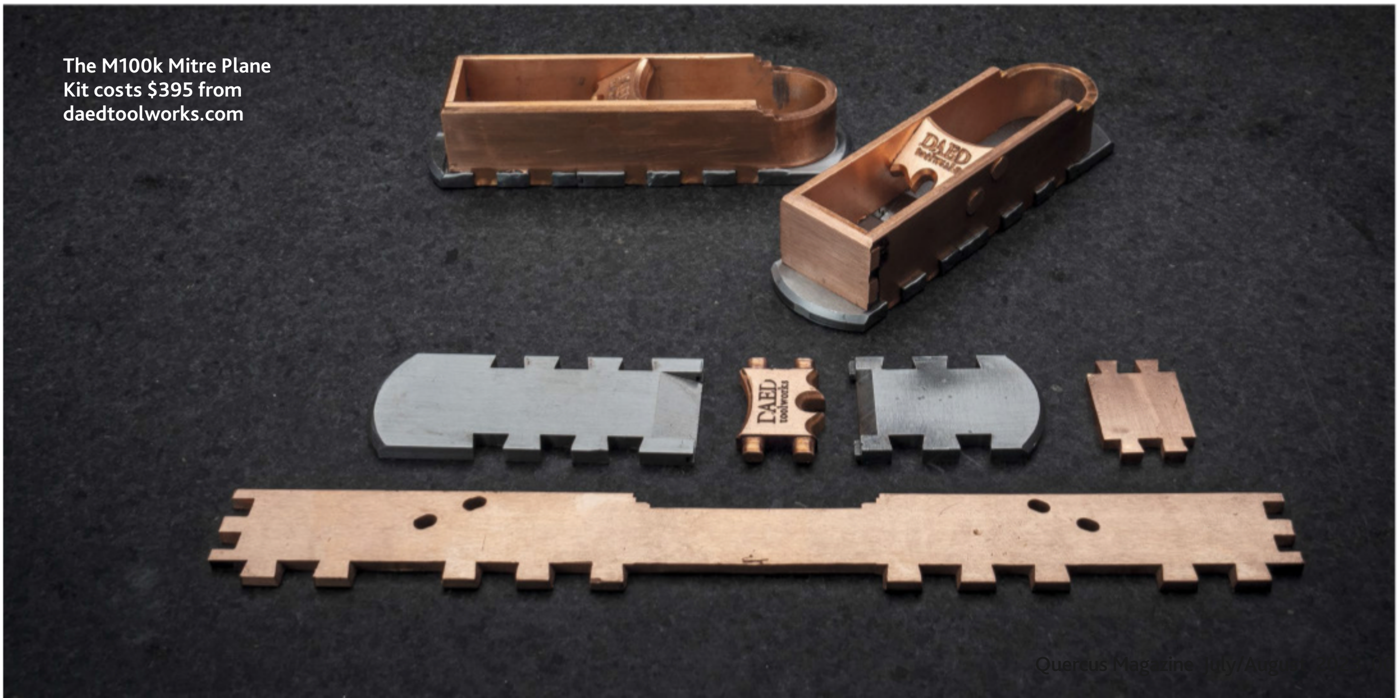
M1 Mitre plane with boxwood infills



CS-T Smoother, with
Ceylon satinwood infills



CS-1 Coffin smoother with
Honduran rosewood infills



The M100k Mitre Plane
Kit costs $395 from
daedtoolworks.com

Shapely Soles

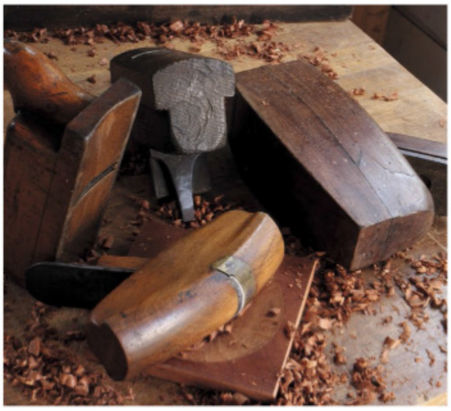
Stressed by straights and squares, *Robin Gates* relaxes with some well-rounded woodies

I had been trying to improve the quality of my work through taking greater care over the straightness, squareness and flatness of things, investing long hours in flattening my workbench and the soles of my planes, practising perpendicular saw cuts and taming unruly endgrain on my shooting board. But what began as an occasional tweak to technique had rapidly snowballed into a state of constant dissatisfaction. A cumbersome toolmaker's protractor had usurped my trusty old try-square and I'd become so hung up on the quality of shavings I was gauging their uniformity with a micrometer screw gauge.

'If it looks right it is right' had always been my rule of thumb, even if technically it's a bit wrong. Settling for 'close enough' in the parts had usually resulted in a whole that was, to my eye at least, 'good enough'. What had changed?

Perhaps the root cause of my stress lay in binge-watching woodworking videos during the COVID pandemic, becoming envious of the exactitude of experts whose roles and goals differed significantly from mine. I decided it was high time I turned off the wretched Internet and turned towards the tree, the source of our raw material. There's nothing flat or right-angled about trees. A tree is a feast of organic bulges, hollows, spontaneous angles and serpentine paths, and, of course, works beautifully. Clearly I needed a break from the straight and square ways of elementary joinery, in fact a spell of soothing curve therapy.

Trailing cobwebs I emerged from the under-stairs cupboard clutching a bunch of old wooden planes with ne'er a flat sole among them. Namely, a honey-hued spar plane recalling the golden age of sail, a barrel-bottomed compass plane, a rugged little gutter plane and the curiously-named bollow. Unlike Bailey-pattern bench planes (if you've seen one you've seen them all) these shapely-soled woodies are as different from each other as four of Chaucer's pilgrims on the road to Canterbury. My senses which had been dulled by so much sole-flattening and lazy twiddling of knobs and levers were immediately refreshed by the woodies' needs for quirky honing set-ups and delicate hammer-tapping on a battle-scarred iron. All concern for the flatness, straightness and squareness of things was swept aside with yesterday's shavings as I wrapped my fingers around the spar-plane's warm wooden stock and pushed off in search of curvature.

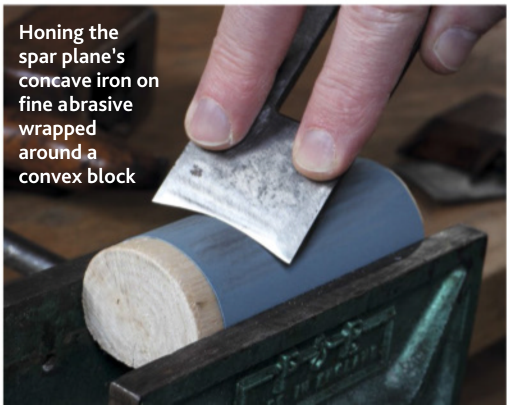

Clockwise from top left: spar plane, gutter plane, compass plane and bollow

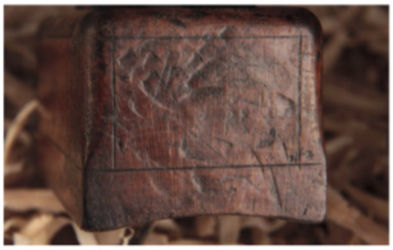
Making Masts & Handles

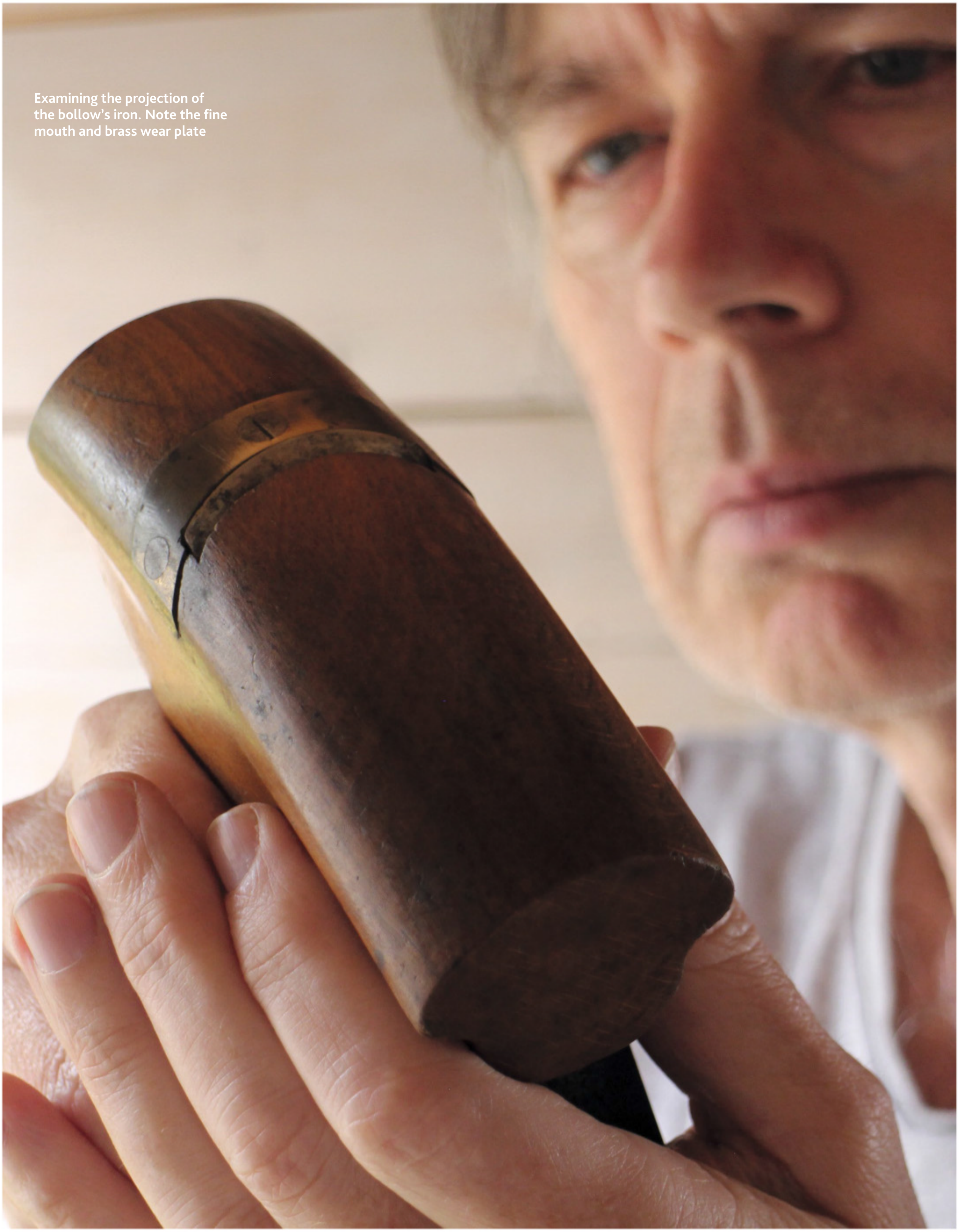
A visit to a traditional wooden boatbuilder reminded me that nothing generates wood shavings so abundantly as making spars. I'd interrupted my old friend John as he was planing a new mast to shape for a small cruising yacht and wading shins-deep through a sea of spruce shavings. Over the course of the week he reckoned on walking the plane a country mile up and down the tapering stick from heel to truck, occasionally stopping to check on progress by offering up a template at key stations. Much of the grunt-work could be done with a jack plane but at the point when this flat-soled tool achieves little more than a new set of facets it would be time to deploy the spar plane. Its special feature is a concave iron with hollow sole to match leaving a convex surface in its wake.

Besides shaping masts the spar plane could also be used to make booms, spinnaker poles, tillers, the looms of oars and just about anything else of a longish roundish nature like tool handles, ladder rungs and table legs. Typically the worker would make their own spar plane by hollowing out a standard wooden smoother and grinding the iron to a radius of curvature which suited their particular needs. This example has a 3in radius, while the body of the plane has a 'cow horn' front handle dovetailed to the toe, a feature often seen in older British scrub or 'roughing' planes but more common to hand planes on the European mainland. Switching attention to the heel, we can see through the hammer marks of a long working life that the pale parallel lines of medullary ray run nicely perpendicular to the sole so as to maximise durability. It's also pleasing to see that the maker's layout lines have come down the years unscathed. The iron by F.G. Pearson & Co, a long extinct firm of Sheffield edge toolmakers, suggests a date around the 1890s.

Honing the concave iron only required that it be worked upon fine abrasive paper wrapped around a convex former gripped in the vice. Then I began rounding the handle for a sledge hammer and must say I've rarely had more fun with a plane, running it up and down the piece like a monorail train with shavings pouring forth like smoke from a chimney. Wooden planes, especially small ones, seem to radiate warmth and softness. Still, anyone rounding timber full-time would doubtless forgo such


Honing the spar plane's concave iron on fine abrasive wrapped around a convex block


The heel of the spar plane has been well hammered but the vertical medullary ray and maker's layout lines still show clearly



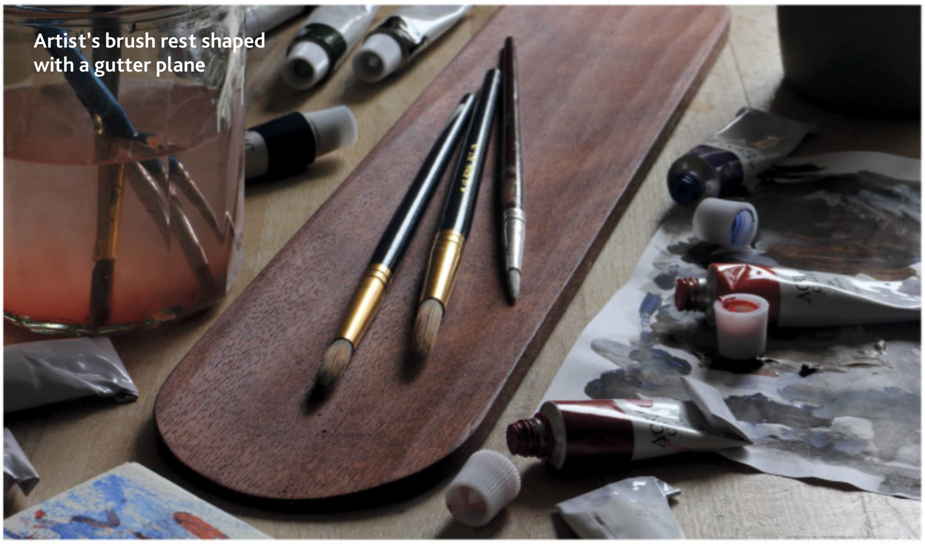
Examining the projection of the bollow's iron. Note the fine mouth and brass wear plate sentimental indulgence in old woodies, bypassing even the best of today's Bailey-pattern planes, don the safety specs and ear plugs and let a power tool do the business. The measured pace of the old spar and handle maker has mutated into something like a mad dash with a strimmer to cut the grass before it rains.

Compass course

Over the course of their career, from seven years apprenticeship through journeyman to becoming a master of their trade, a woodworker would assemble a wide variety of hand planes, some general purpose tools like smoothers, jacks and jointers while others were of a more specialised nature. One of the more unusual types, and by all accounts a tricky one to master, was the compass plane used to shape a concave curve.

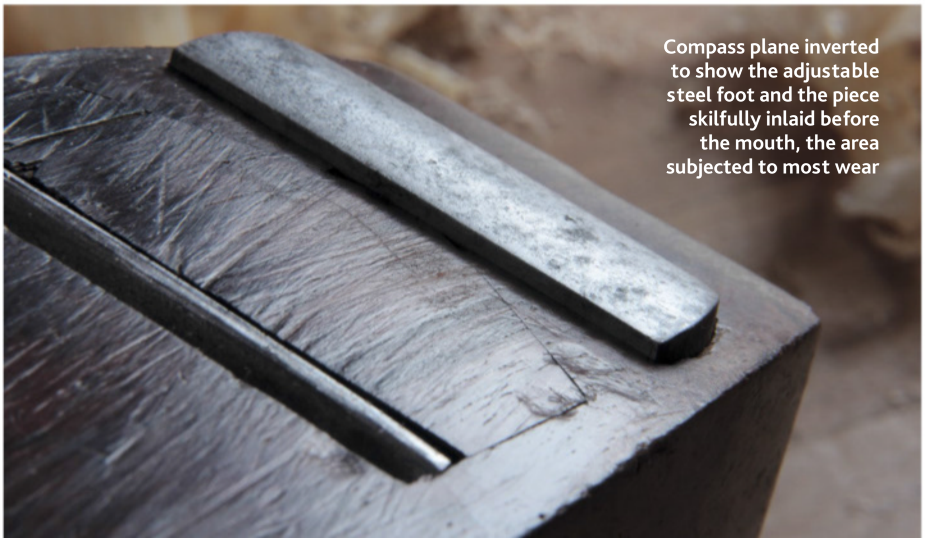
This example supplied by London retailer Joseph Buck is fitted with a stop, an auxiliary steel toe which can be raised or lowered by turning the brass thumb screw so as to fine tune the effective cutting radius. Reference to a 1912 catalogue indicates this was a top-of-range compass plane (cheaper versions had a sliding boxwood stop or none) which cost eight shillings and sixpence plus four pence postage.

Speaking from short experience, I find the difficulty in getting going with this plane stems from there being very little contact between its sole and the timber in the early stages of creating a hollow in a flat surface. Once the hollow is established it's a pleasure to use but until that point there's a danger of the plane see-sawing on its edge, skittering across the wood to leave a succession of ugly scars. While exploring every wrong way of doing things I tried using the plane against the grain whereupon, even with a mere smidgen of iron projecting, it dug in like a mattock breaking ground. Recalling the patience and wrist-rolling action required of using a round-bottomed spokeshave, however, I soon had the plane running more smoothly and better still if skewed just a little.


Artist's brush rest shaped with a gutter plane

Turning the plane over for inspection reveals that a graving piece has been inlaid almost invisibly in front of the mouth, undoubtedly to restore the original profile of the sole worn hollow in its most hard-worked area. The mouth itself is pretty tight which is good for taking a fine shaving but has a tendency to clog and requires frequent clearing. An odd feature of the construction is that the stock is made of two pieces, the top half being to the regular smoother's pattern and the bottom half bearing the compass profile. A detail more typical of the commercially-made woody is the tear-drop hollow known as the 'turnout' on either side of the escapement. This is where the thumb hooks inside the plane when it is inverted for setting the iron.

Honing this iron followed the same routine as for a regular bench plane, only requiring a trace of side-to-side rocking to ensure all parts of the subtly cambered edge touched the whetsone. Looking for something simple to make of a hollowed test piece I saw the makings of a pair of curtain hold-backs, and a neat demonstration of the practicality of an 'obsolete' wooden plane in the 21st Century.

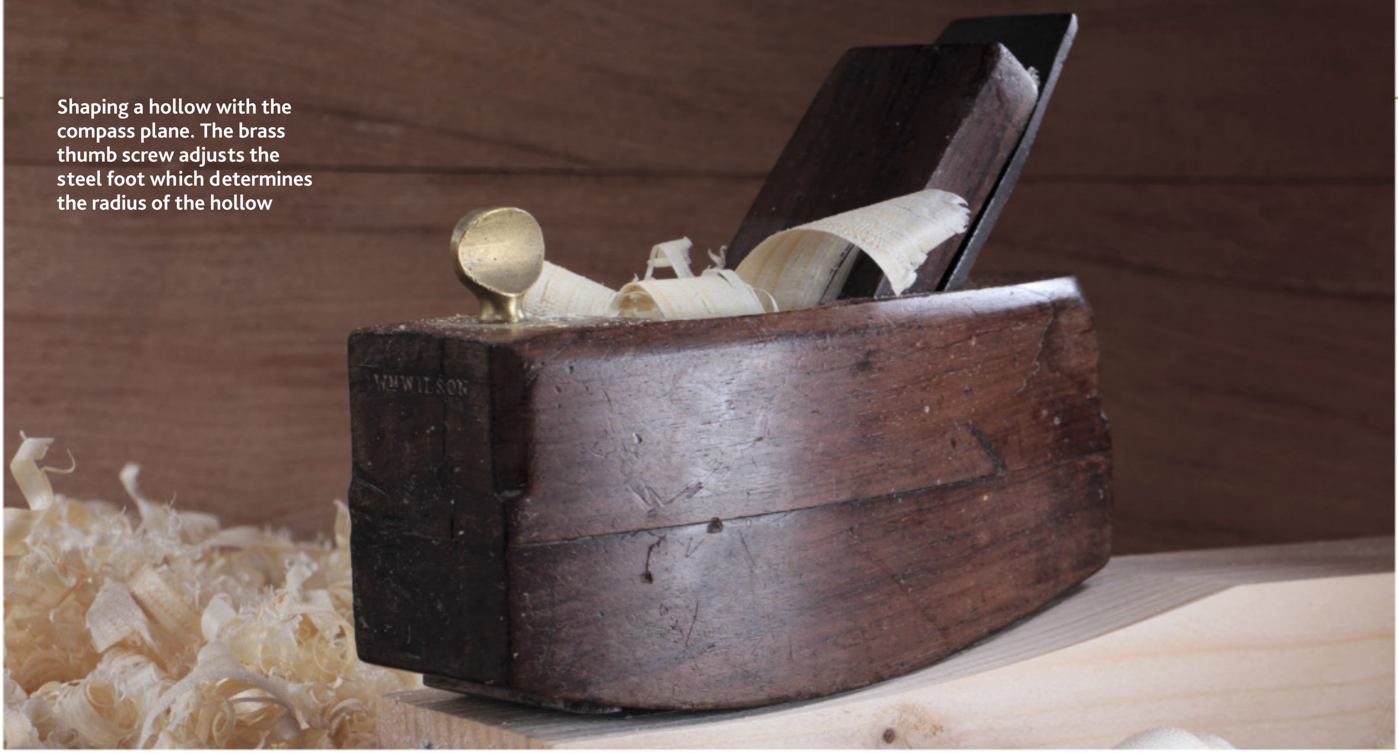

Compass plane inverted to show the adjustable steel foot and the piece skilfully inlaid before the mouth, the area subjected to most wear

Channelling grandad

The eaves of our house are surrounded by bland plastic rainwater gutters, one of which I notice has come apart at the join, but the gutters of my grandparents' house, although in no less deplorable state of repair, were of a more elegant and substantial cast iron. And I recall that when the landlord refused to replace a short stretch of missing gutter Grandad boldly filled the gap with a gutter made from wood. This isn't Grandad's gutter plane (his was probably a modified jack plane) but it is essentially similar.

Boatbuilders know this as a 'backing out' plane, used for hollowing a plank's inside face to fit snugly against the supporting frames, and it is invariably a user-made tool, shaped to a length, width and radius to suit the application. Despite the thousands of wooden boats that have been built no mainstream manufacturer seems to have thought it worthwhile offering one. But that situation may change as a new generation of woodworkers look for the tools needed to revive dormant crafts. In the meantime a feasible stand-in for the gutter plane might be one of the larger round moulding planes, say a No 18 with 1½in (38mm) iron.

One of several user-made hallmarks is this plane's quarter-sawn oak instead of the usual beech, and another the layout lines which guided the maker's saw and chisel. The iron at the heart of the handsome beast is a modified firmer chisel by Ward, its tang roughly severed and the sharp end rounded. The iron is pitched at 65 degrees which is 15 – 20 degrees higher than most smoothers, suggesting that it was intended for working hardwoods

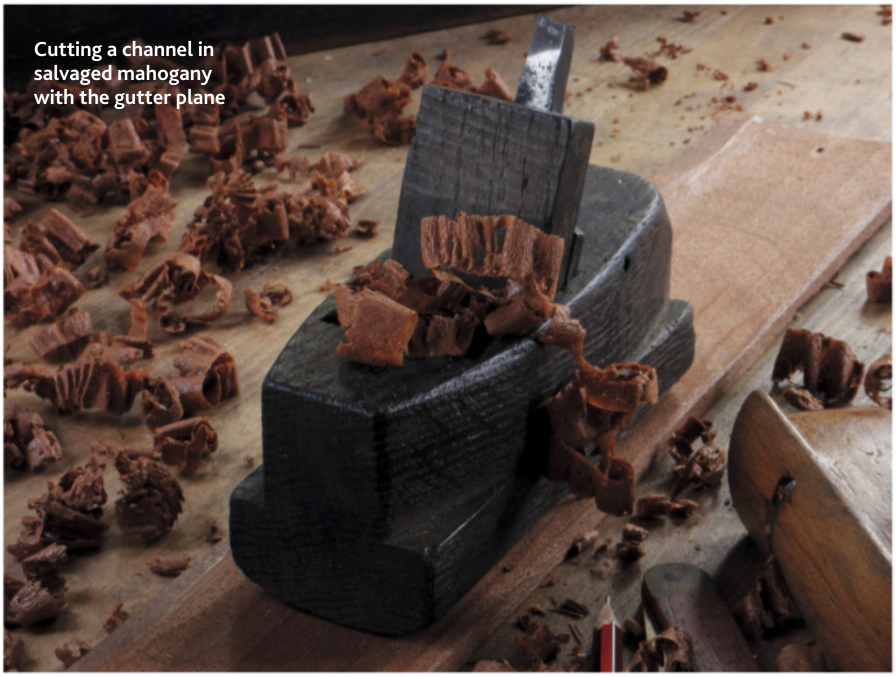


Shaping a hollow with the compass plane. The brass thumb screw adjusts the steel foot which determines the radius of the hollow

Easy Curves

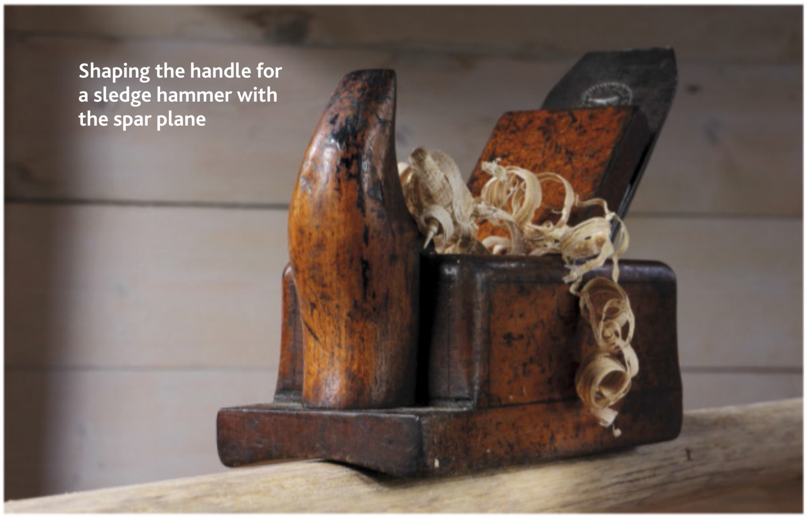
A justified emphasis on flatness and squareness has resulted in countless copy-cat hand planes with flat soles while, excepting moulding planes and spokeshaves, the new plane with a curved sole appears to be an almost extinct species.

Using an old compass plane (above) gutter plane (right) or spar plane (bottom) opens the way to some easy curves and highly satisfying small projects.



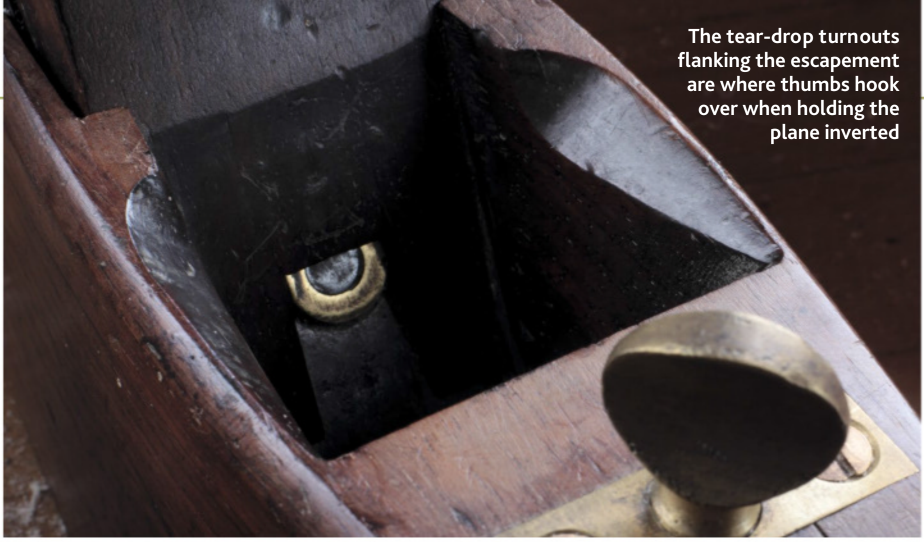
Cutting a channel in salvaged mahogany with the gutter plane

The product of a few minutes work with the gutter plane



Shaping the handle for a sledge hammer with the spar plane

Minimalistic fruit dish in mahogany hollowed by the bollow



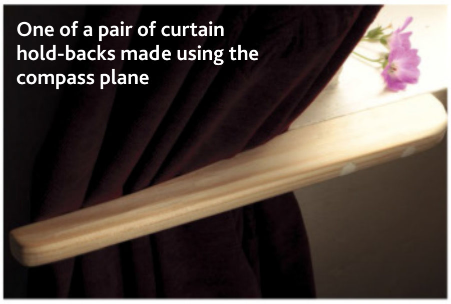
The tear-drop turnouts flanking the escapement are where thumbs hook over when holding the plane inverted

for which the higher angle of attack would prove more effective. Although I found the plane with edge chipped and dull its old chisel steel is of excellent quality and was quickly restored to near surgical sharpness on the grinding wheel and whetstone. Honing its convex edge required a pendulum action similar to that of honing a large carving gouge or a hook knife.

There's invariably a learning curve associated with using an unfamiliar wooden plane and for this one it involved working out the grip. Notice how the stock is tapered towards the heel and toe to fit the hands comfortably, in the usual style of the wooden smoother, but the tapering stops short of the sole whose width remains constant from end to end. This creates little ledges at the corners of the plane which are useful landings for the finger tips applying down force. As a test piece I worked a channel in a length of salvaged mahogany then, thinking what could be made of it, rounded the ends with a coping saw and created a brush rest.

Curved two ways

When a compass plane meets a gutter plane their offspring is this: a baby plane curved two ways, a plane bursting with so much shape it seems barely able to contain itself. Those ballooning double-curves seem almost cartoonish, a nonsense tool which might have been dreamed up by Edward Lear. I imagine the Owl and the Pussy-cat used such a plane to build their pea green boat, or at least a pair of 'runcible' spoon-bladed oars. Indeed old-school wooden boatbuilders will recognise it as a 'bollow', often tasked with sculpting the hollows of spoon-bladed oars and paddles. But a cooper shaping the inner faces of barrel staves, likewise needing to work in and out of a hollow from any direction, would know this same double-curved plane as a stoup. But I like the way 'bollow' seems to echo the plane's purpose: creating a boat-shaped hollow. Other specialist craftspeople (perhaps the chairmaker saddling a seat) may know it by yet another name.



One of a pair of curtain hold-backs made using the compass plane

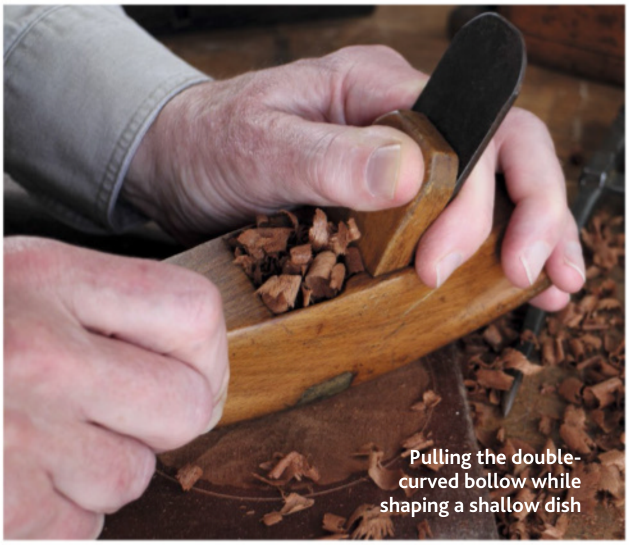
Gutters and Coffins

As with the gutter plane, many a bollow (or stoup) has been improvised by reshaping the sole and blade of a wooden coffin smoother or jack, typically resulting in a coarse, wide-mouthed tool that's good for removing a lot of wood fast but leaves a deal of smoothing to be done. This one is without doubt a bollow born and bred, cute as a young rabbit and likewise nestling delightfully in the hands. Fingertips find their way into those smooth indentations at each end and, befitting its ability to cut from any direction, the plane may be pushed, pulled, skewed or rolled as the needs of the moment dictate. Like a well-set spokeshave this is a tool that's hard to put down, you just want to keep on cutting especially as its very fine mouth (about 0.5mm) never seems to clog. Notice also the very practical brass wear plate standing up to friction inevitably concentrated in front of the blade. A bollow without a wear plate would soon lose its original radius.

While practising technique I used a salvaged scrap of mahogany, hoping that its diffuse porous grain would prove more amenable to working from all directions than a ring porous species. I scribed a circle with wing dividers then began scooping out the middle, gradually working towards the perimeter. Planing a circular crater involves working against the grain as much as with it so I expected some tear-out but thanks to that fine mouth, a sharp edge and the ability to skew and tilt the tool the result was pleasantly smooth, only requiring a touch of the card scraper to complete a minimalist fruit dish.

They say a change is as good as a rest and this spell of curve therapy has done the trick for me. On future projects I'll be keeping these shapely-soled woodies to hand, looking for opportunities to break up the flats and straights with easy curves.

The iron for the gutter plane is a re-purposed Ward chisel



Pulling the double-curved bollow while shaping a shallow dish

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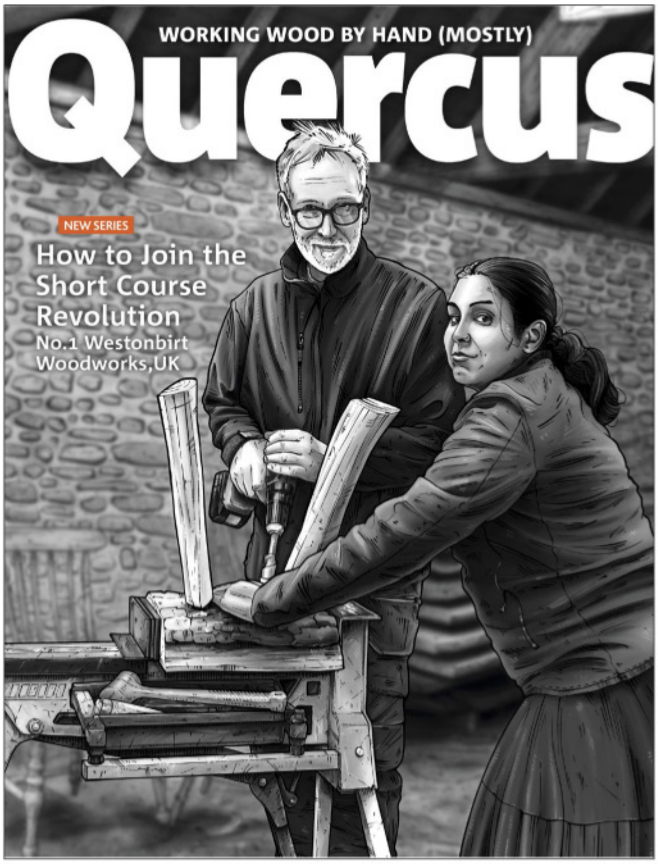
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One for the Oak

The 2012 OneOak Project leader *Gabriel Hemery* writes an oak extract from *The New Sylva*

The oak tree is emblematically and quintessentially English, an iconic national symbol above all other plants and animals. Of the many tree species to which the English have awarded their country name (others include elm and walnut, which will always annoy our continental cousins), it is perhaps 'English' oak that is most deserving, given its role as the material that was once at the heart of a mighty superpower.

There are estimated to be more than 700 oaks named individually in Britain. Perhaps the most famous is the Major Oak in Sherwood Forest, Nottinghamshire, in which Robin Hood is reported to have hidden to escape his enemies. One of the largest is the Bowthorpe Oak in Lincolnshire, thought to be more than 1,000 years old and whose girth measures 12.3m at 2m height. The Pontfadog Oak in Wrexham was 1,200 years old when it was killed by a spring storm in 2013. These and other notable trees, such as the Meavy Oak on Dartmoor, a 'dancing tree' on which a platform was erected for parties, were already 500 years old or more when John Evelyn was writing his *Sylva* [the book he wrote, and which was published in 1664, and which has inspired the author publication of *The New Sylva*].

Biology, Distribution & Habitat

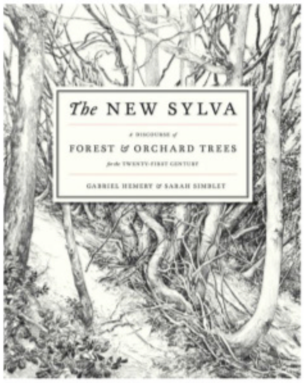
The *Quercus* genus contains about 600 species that are distributed naturally only across the northern hemisphere. Many are located in warm temperate and tropical montane climates, the greatest concentration of oak species being in Central and North America (Mexico has 125 native species; the US has 75). In Europe, 27 oak species occur naturally. Although many *Quercus* species have been planted in Britain, in the arboretum (sometimes known as a quercetum), park and garden, only four have to date shown any potential as productive forest species. Our two native species, sessile oak (*Quercus petraea*) and pedunculate oak (*Q. robur*), are of considerable economic and ecological significance and are the main species considered here. Turkey oak (*Q. cerris*) and red oak (*Q. rubra*) also show potential.

Turkey oak is native to southern Europe and south-west Asia. The timing of its introduction to Britain is uncertain, although it is known to have been present in 1735. It looks similar to the two British oaks and can grow to a large size, outwardly exhibiting excellent stem form as a timber-producing tree. Unfortunately its timber has little productive use: it is hard and brittle with a large proportion of sapwood and shrinks greatly when dried.

Red oak is native to the eastern US and far south east of Canada, where it is a major component of hardwood forests. It was introduced to Britain during Evelyn's lifetime, in 1692. The species has similar site requirements to those of the two British oaks, but it is more tolerant of heavy clays and hence potentially a productive tree crop where few other native hardwoods will grow. Except in the south of Britain, red oak does not produce viable seed, and even then only in small quantities, so little natural regeneration is evident in current climatic conditions. The name 'English' oak is used rather loosely, and there has long been confusion about the differences between what some have called English oak, which we now call pedunculate oak, and sessile oak. The two species hybridise to produce intermediates, so identifying them is often difficult. In forestry, and throughout centuries of the written word and in art – its leaves and acorns adorn historic thrones and church carvings, as well as modern logos suchas those of the National Trust and the Sylva Foundation – the two British oak species are often described as one, and it is in this tradition that the species are described here, except where distinctions require emphasis.

OneOak Project
www.OneOak.info

Gabriel Hemery launches the OneOak Project at the Pitt Rivers Museum in Oxford



Both British oaks are native to Britain and most of Europe, extending into western Asia, and while their distribution overlaps, they exhibit specific preferences for different habitats. Sessile oak is characteristic on stony soils (its Latin name, *petraea*, means 'rock') and more prevalent in upland regions in the north and west of Britain, while pedunculate oak is more common on lowland soils in the south and east. Widespread planting over centuries has, of course, blurred these natural distributions.

A natural quirk exists in the three upland oak woodlands on Dartmoor in south-west England, which all consist of pedunculate rather than sessile oak. British oaks are the third most common tree group after Sitka spruce and pines, occupying some nine per cent of all forested land in Britain.

Pioneers and Palatable

Oaks are pioneer species due to their ability to move considerable distances from their parent trees. This is because their seeds (acorns) are highly palatable to many animals and birds, which disseminate them. Each acorn contains a substantial reserve of energy in its large cotyledon, upon which the emerging seedling can call upon to outcompete existing vegetation. As in other trees

A 220-year-old giant falls in Blenheim Park as the OneOak Project commences in 2012

with large seeds, such as walnut, oak roots develop often before and usually faster than the shoot above ground, allowing the tree to establish roots before the shoot starts to demand high levels of energy. Technically, neither of the British oaks are ‘climax’ species because in other forest ecosystems this role is taken by shade-bearing trees. However, Britain’s primary shade bearer, beech, has a limited range. Therefore oak woodlands – with their trees being extremely long lived, able to grow on such a wide variety of sites and capable of spreading efficiently – appear to be our natural climax forest system.

Stalks and Acorns

The acorns of the two British species grow differently on the stem, and this difference is the most useful way to distinguish between the two (noting that hybrids are also possible). Those of pedunculate oak grow on a stalk or ‘peduncle’, while those of sessile oak do not. Another difference between the two pure species, although less reliable, is the lobes, or auricles, that are on the base of the pedunculate oak’s leaf, pointing backwards around a petiole (leaf stalk) about 5mm long. In sessile oak these auricles are absent, and the base of the leaf points forward away from a longer petiole (10-20mm long). Oaks are monoecious trees, having both male and female flowers on the same individual. Their pendulous green catkins (male flowers), which can be up to 10cm long, produce huge quantities of wind-borne pollen ready to fertilise the inconspicuous female flowers, which measure only a few millimetres across and have a cluster of tiny feathery stigmas emerging from their tips. Like its acorns, the female flowers of pedunculate oak appear on peduncles, whereas those of sessile oak are close to the stem.

Oak’s distinctive phenology has intrigued people for centuries, hence traditional weather sayings, such as: ‘Oak before ash, we’ll have a splash; Ash before oak, we’re in for a soak’. Variation within and between tree species is often due largely to local conditions, and on average across Britain, oak normally flushes (comes into leaf) before ash. Work by the UK Phenology Network has shown that pedunculate oak will flush four days earlier than ash for every 1˚C of increase in temperature. Both British oaks are also notable for their Lammas growth – the production of a second growth of shoots and leaves later in the summer. The bright green crop of new leaves contrasts dramatically with the dark green older foliage, and inspired the traditional Celtic Lammas festival on the first day of August.

Another phenological phenomenon of oak is its seed production. Both British oaks produce heavy crops of acorns irregularly on three- to four-year cycles. Heavy crops are known as mast years,when a mature oak can produce 50,000 acorns or more. This may have emerged as a natural strategy by the oak, given that most of its seeds are consumed by mammals and birds. It is, after all, thanks only to the forgetfulness of the jay (*Garrulus glandarius*) – *geai des chênes* in French, meaning ‘bird of the oaks’ – squirrel and other small mammals that some acorns reach new ground and are able to germinate. The irregularity of mast years in Britain caused difficulties for those who depended on oak mast for pannage, the fattening of animals in autumn woodland.

Oak seed typically is not produced until a tree is 40-50 years old, while high yields may not follow for a further 30 years. Pedunculate oak tends to be a more prolific producer of seed than sessile oak, partly because the latter grows in cooler climates and at higher altitudes. For this reason, and because sessile acorns are more difficult to store and transport, pedunculate oak has for centuries been planted more widely across Britain than sessile oak. This has consequences for tree health if the oak species chosen for a specific site is not appropriate during periods with less favourable conditions.

Oaks live to an incredible age, and these ‘veterans’ are immensely valuable ecologically and culturally. Their natural ability to hold onto dead limbs and to survive with hollow stems provides habitat niches for thousands of specialist invertebrates, and for bats, birds, fungi, lichens, mosses and even other tree

DEEP IN WOOD

OneOak Project makers meeting at the Deep in Wood specialist timber yard/store to select boards from the Blenheim Oak, with Robert Ingham and Philip Koomen far right

CREDITGABRIEL HEMERY

species that can take root within their rotting hulks. All British oaks, young and veteran, are important ecologically, both as individual trees and in the woodland ecosystems they foster. They are well known to support the richest fauna of any tree species in Britain, with an estimated 500 invertebrate species being entirely dependent on them. Many are very rare, inconspicuous and likely to be identified only by the entomologist. Others are easier to identify, if they can be spotted, a prime example being the stunning purple emperor (*Apatura iris*). This beautiful and rare butterfly has developed a specific relationship with oak: adults feed on the secretions of aphids feeding on oak leaves and also from bleeding wounds on the tree, yet they fly typically high in the upper canopy and can be difficult to see. The only butterfly species entirely dependent on oak as a food source in Britain is the purple hairstreak (*Quercusia quercus*), whose caterpillars emerge at night to feed on oak leaves and whose camouflage makes them resemble a dormant oak bud. In a final and extraordinary twist in their life cycle, these pupate on the forest floor, where they are often picked up by foraging ants and taken t their nests until they hatch as adult butterflies. Many moths have remarkable patterns of camouflage adapted to life on an oak tree as larvae and/or adults. Examples include the aptly named oak beauty (*Biston strataria*), oak-tree pug (*Eupithecia dodoneata*) and a pretty micro moth, *Carcina quercana*, whose pale green caterpillars can be found beneath a flat web on the underside of oak leaves.

Moths and Strippers

Other moths are less welcome and can become serious pests due to their ability to strip entire oak trees of their leaves, notably the green oak tortrix (*Tortrix viridana*) and winter moth (*Operophtera brumata*). A similar diversity of beauty and threat exists among beetles and bugs, either carnivorous or herbivorous, often feeding off deadwood. Common in oak woodland is the stag beetle (*Lucanus cervus*), with its distinctive giant mandibles (in the male), and the beetle *Dendroxena quadrimaculata*, a widespread friend of the oak tree, whose larvae feed on caterpillars. The deathwatch beetle (*Xestobium rufovillosum*) feeds on decaying wood in woodland (and in the rotting timber beams of houses, where the ticking noise of the male knocking to attract a mate was reputed to herald approaching death), as does the oak bark beetle (*Scolytus intricatus*), cousin of the elm bark beetle (*Scolytus scolytus*), which is responsible for the spread of Dutch elm disease. Oak trees are host to more galls than any other European plant. More than 40 different types of gall are produced on oak, mostly by the tiny gall wasps of the *Cynipidae* family but also by midges, moths and scale insects. The most common known to many children, is the marble gall caused by *Andricus kollari*. These were once imported from the continent into Britain in large quantities for use in dye- and ink-making. The knopper gall (*Andricus quercuscalicis*) causes alien-like growths to appear on the acorns of both British oak species, and can sometimes be so prevalent as to affect an acorn crop severely (they may be controlled if the wasp's alternate host, Turkey oak, is removed from the vicinity).

Artichoke gall looks like a small globe artichoke and is caused by the wasp *Andricus fecundator*; like many galls, it conceals a single larva, which emerges in the spring two years after forming. Other notable galls include those found on the undersides of oak leaves, including cherry gall, silk-button gall and spangle gall.

The 'oak apple' is perhaps the most famous gall of all, caused by the gall wasp *Biorhiza pallida*. Oak Apple Day is still celebrated each year in remembrance of the Restoration of King Charles II in May 1660. Nine years earlier, Charles had hidden inside the hollow stem of an oak tree at Boscobel House in Shropshire after his defeat at the Battle of Worcester. As Samuel Pepys recorded: 'Parliament had ordered the 29th of May, the King's birthday, to

Boards stacked at Deep in the Wood ready for selection by makers as part of the OneOak Project (photo by G.Hemery) be for ever kept as a day of thanksgiving for our redemption from tyranny, and the King's return to his Government, he entering London that day.'

Timber and Other Uses

The timber of both British oaks is coarse grained and ring-porous, with pronounced annual rings. Its pale sapwood is susceptible to attack by insects and can have as many as 20-30 annual rings, meaning in these cases that a significant proportion of the timber may have to be discarded. By contrast, the heartwood is durable and immensely strong. It is also impermeable (except in red oak), which led to its use in barrel making, especially for whisky (often after being used first to mature sherry) and wine.

Some oaks reveal a dark 'brown heart', which is highly prized by furniture-makers. This is caused by the beefsteak fungus (*Fistulina hepatica*). When oak is quarter-sawn or cut radially its medullary rays are enhanced to produce a distinctive silver figure. This is one of the most difficult timbers to dry, being extremely liable to checking (splitting), bending and twisting. Cut boards and beams should be stacked carefully and weighted, and their cut ends painted or sealed to avoid end splitting. Air drying is effective, providing the cut timbers are shaded from direct sunlight, while kiln drying must follow a gentle and lengthy regime. Kiln drying of thick material (10cm or more) is uneconomical. Traditionally, green (undried) oak is desired for many construction uses, its shrinkage during drying in situ being highly effective in tightening joints, for example in the frames of houses.

Oak is legendary as a construction timber, whose apparent shortage for shipbuilding in the seventeenth century prompted the commissioning of Evelyn's *Sylva*. Being ring-porous, the early-wood vessels are large and the wood light, and it is the wood formed later in summer that gives oak timber its strength. As in other ring-porous species, such as ash and sweet chestnut, the faster oak grows, the stronger its timber.

Capable of being finished to an extremely smooth surface, oak takes waxes, varnishes and paints readily. Traditionally it was limed to enhance the grain and create colours ranging from pale grey to jet black, as in Tudor or Jacobean oak. The highest-quality oak is sliced for veneer for use in furniture-making and panel boards, but candidate trees must be grown slowly. The Spessart region of Germany is renowned for growing high-quality oak veneer butts that typically are harvested when 400 years old, with each annual ring little more than 1mm wide. The high tannin content of oak timber has a corrosive effect on mild steel and iron when damp, resulting in blue-black stains that cannot be removed, so it is recommended that certain tools are avoided and that fixings for external use are of stainless steel, brass or another nonferrous metal. Oak bark is also high in tannins and was used in the tanning of leather (being particularly potent, apparently, when mixed with the urine of pre-pubescent boys). After the late 1800s, bark from various tropical species was imported for this purpose instead, followed soon by synthetic substitutes.

Shake, or splitting, is a serious timber defect that can be prevalent in oak but difficult to spot, hence Evelyn's views on buying standing trees. About 21% of all British oak may be affected by shake, according to a study undertaken in the 1990s, leading to an annual loss of income of between £3-8m. Silvologists working in Oxford in the early 1990s, led by Peter Kanowski and Peter Savill, discovered that a tree's propensity to exhibit shake increased with larger vessel sizes in early-wood, and furthermore that this trait was highly heritable. So, although water shortage during drought periods as a result of poor site selection is a factor in causing shake in oak, it is likely that this environmental factor triggers the condition in trees that are genetically predisposed to it.

Robert Ingham selecting boards at Deep in Wood for OneOak pieces

Work by other silvologists has shown that trees which flush latest in spring are also likely to have the largest early-wood vessels. In the absence of selected improved trees provided through a breeding programme, which would allow a forester to avoid planting trees prone to shake in the first place, this offers a simple means to reduce the proportion of shaken trees,by removing the latest-flushing oaks during early thinning operations.

Red oak timber is as strong as that of sessile and pedunculate oaks and attracts high demand in continental Europe, especially France, where it is used in flooring, furniture and joinery. In Britain, however, it is not yet popular. It does not share the durability of our native oaks and it has a plainer figure and colour. Turkey oak produces a hard but brittle timber that has long been recognised as wholly unsuitable for timber production.

Pests & Diseases

Given the significant amount of biodiversity that British oaks support, it is inevitable that they should be host to many species of insect and fungus that we consider to be pests. In addition to some of the defoliating insects described above, one recent arrival

Fabulous brown heartwood is found at the base of the Blenheim Oak

to Britain that is of great concern, in terms of human health as well as tree health, is the oak processionary moth (*Thaumetopoea processionea*). The species owes its name to the manner in which its larvae follow one another in processions along oak stem and branches. They can cause considerable defoliation, but the bigger worry is the toxic hairs that certain instars (stages of the larvae) carry. These can cause serious irritation to the bronchial tubes, eyes and skin of humans and other mammals, bringing on shortness of breath when inhaled. Repeated exposure can lead to increased sensitivity. The hairs are shed by the larvae when threatened, and when moulting between instars, and they can persist in woodland or parkland for years, preventing recreation or forest work in and around previously infected oak trees.

The pest was first recorded in Europe in 1991, in the Netherlands, arriving in London in 2006 among an import of container-grown oaks for a landscaping project. It spread quickly to the Royal Botanic Gardens at Kew in southwest London, where, despite the deployment of significant resources, neither containment nor eradication were successful. In the nearby Royal Park at Richmond, extermination attempts were reported to have cost £50,000 during the first year, since then doubling year on year, but again they were not successful.

By 2012, management of the pest in Central London had changed from eradication to containment by removing nests to try to prevent further spread, in recognition that the pest had defeated all attempts at the former. An outbreak in Pangbourne, Berkshire, has recently been tackled via helicopter spraying of bio-insecticides, with the intention of eradication.

Powdery oak mildew caused by the fungus *Microsphaera alphitoides* results in a white bloom of felt-like *mycelium* appearing on foliage in late summer. The fungus tends to be promoted first by mild and overcast weather in the spring and early summer, and becomes prevalent later during warm summer periods. Infected foliage will shrivel and blacken eventually, causing some loss of photosynthetic capacity in severely affected oaks. It may be a contributing factor in acute oak decline.

The grey squirrel is such a serious pest in oak stands that its bark-stripping antics on both stem and branches of trees aged between 20 and 40 years threaten any serious attempts to grow oak timber in Britain (and other countries where it runs amok). Growers of high-quality oak in Britain must resort to a zero-tolerance policy, aiming to eradicate grey squirrels from their woodlands. However, the mobility of the species means that population management is a constant and necessary chore unless neighbouring woodlands are managed similarly. Like many long-lived tree species, oaks die back gradually in their later years. However, a specific form of slow decline in oak, which is not well understood, has been named chronic oak decline. It differs from natural decline in that it can affect much younger trees, causing gradual decline from the outer canopy that may take between five and 20 years to result in death.

A significant period of oak decline followed a severe drought in southern Britain in 1921, and the two factors have been linked. Similar patterns were observed in continental Europe later in the 20th Century. In all cases, pedunculate oak has suffered more than sessile oak due to the latter's greater resistance to drought. In contrast to the chronic version, acute oak decline (AOD) has been defined only recently as a distinct phenomenon. As yet it is not fully understood, but what is evident is the speed with which infected trees die: normally within five years or less of the first symptoms. Work led by scientists at the government agency Forest Research is ongoing, exploring whether a new bacterium may be responsible.

Also implicated are powdery mildew and the oak jewel beetle (*Agrilus biguttatus*), both of which may cause further stress in oak trees and increase their susceptibility. The oak jewel beetle, whose larvae leave D-shaped exit holes in oak bark when they emerge as adults, is known to attack only dead or dying trees, but it may be a carrier of an as-yetunidentified pathogen.

The Future

If sessile oak were planted in preference to pedunculate oak on soils prone to drought, the result may be fewer numbers of oaks being exposed to stress and therefore susceptible to attack by pathogens. With projected climate change, red oak may be a suitable species for dry lowland sites, trees may be prone to shake where soils are sandy. The spectacular autumn colour of red oak earns this species a popular place in the landscape.

Turkey oak is resistant to exposure and tolerant of calcareous soils, making it a potentially useful tree for windbreaks in southern Britain. It has long been a popular firewood in continental Europe and may yet be considered for this purpose in Britain. The notable problem with this species is its role in the life cycle of the knopper gall, and for this reason it would be foolhardy to recommend any increase in planting near to British oak species. There has been little tree improvement work for oaks in Britain. A breeding programme was initiated by the Future Trees Trust (when it was known as the British and Irish Hardwoods Improvement Programme) in the mid 1990s to provide trees less prone to shake. Two hundred potential parent trees across Britain, France, Ireland and the Netherlands were selected on the basis of their excellent form for timber production. Of these, about half were rejected on account of their large early-wood vessel sizes. About 80 of the remaining trees produced sufficient quantities of seed to produce offspring for the breeding programme. A series of eight field trials across Britain and Ireland, including one at Paradise Wood in Oxfordshire – a centre dedicated to hardwood tree improvement and silvological research, owned and run by the Earth Trust – were established as breeding seedling orchards, with a view to producing 'improved' seed. However, tree breeding is a long-term commitment requiring a serious investment of time, money and land, and this programme will not produce any 'improved' seed until 2030 at the earliest.

This is an extract from The New Sylva *by Gabriel Hemery & Sarah Simblet and published by Bloomsbury Publishing.*

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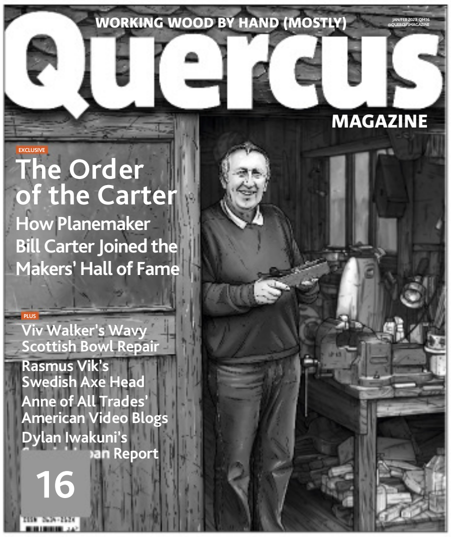
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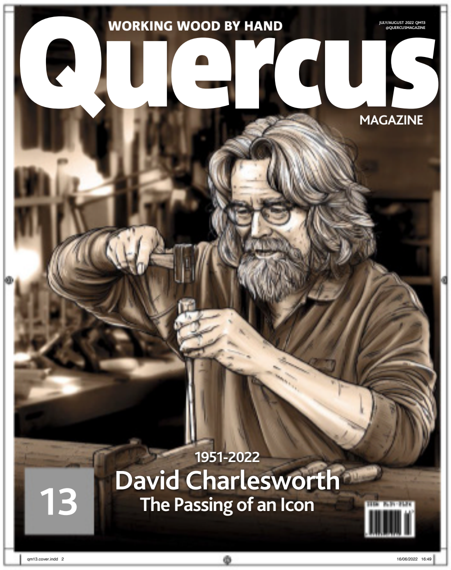
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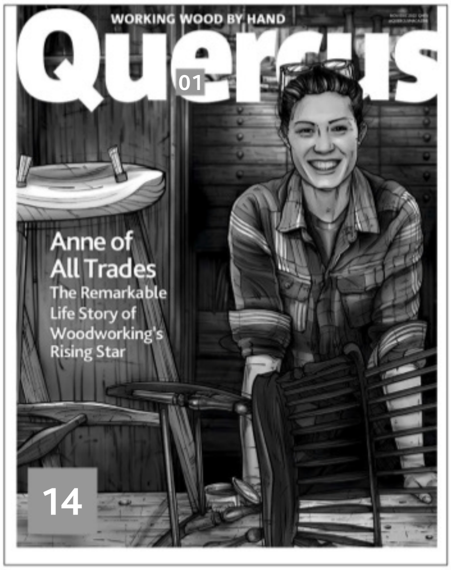
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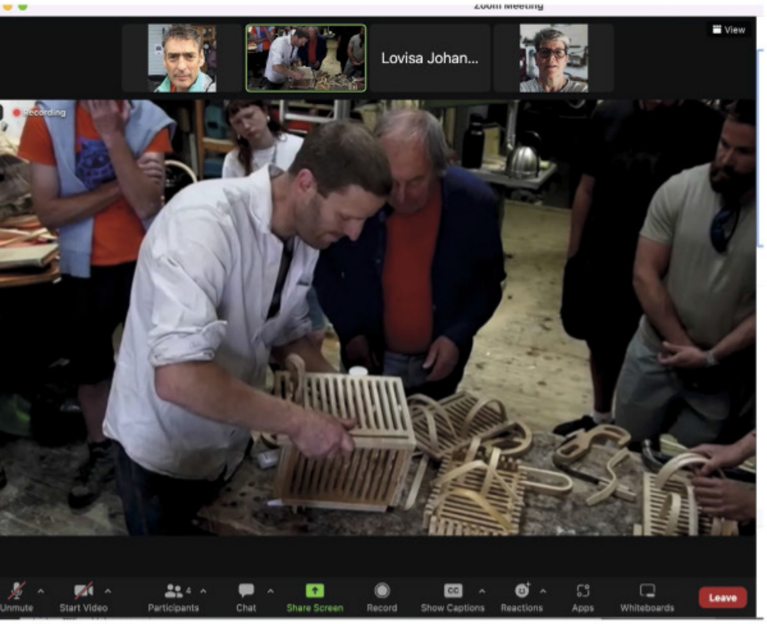
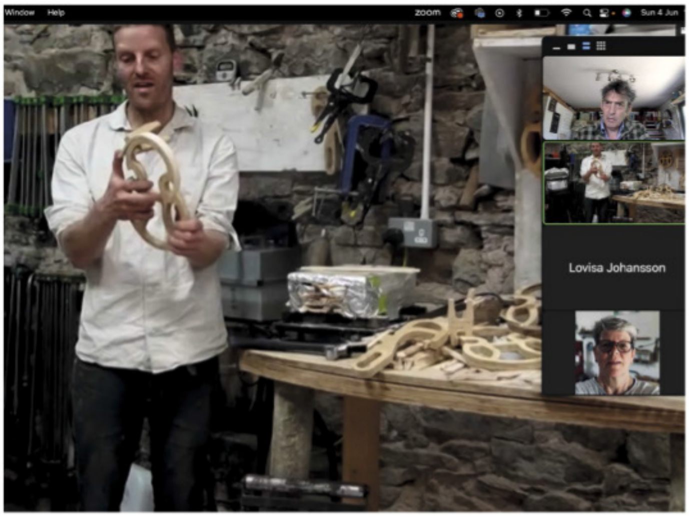
Reviews

Zooming in on the Bends

Louise Wilde **in Ireland,** ***Lovisa Johansson*** **in Sweden and** ***Quercus*** **join a virtual steaming course**





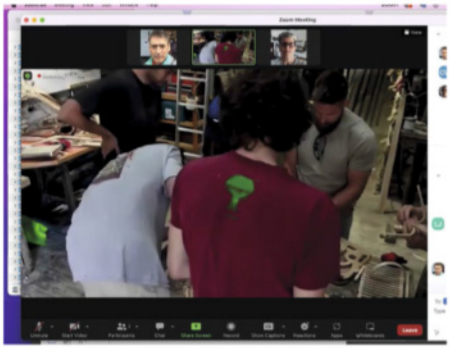
If you want to play steambending games, making models or mock-ups, try using toast racks (left) to bend thin slats, or around 'violin' moulds (above) which have clever gaps and holes to take cramps

Early in June Charlie Whinney, known for his remarkable steambent furniture and installations, and for his book *Wood & Steam*, ran a long weekend course for beginners. We'd have liked to join forces, especially having started making his bentwood dinghy project from the book, but the course was already full and anyway Cumbria is a long way from the Isle of Wight. Instead we chose to pay £40 for Charlie's experimental live Zoom opportunity, to share the lessons and watch the projects being made by participants.

There were actually only three visible Zoom guests, *Quercus*, woodturner Louise Wilde and sculptor Lovisa Johansson, who shares Charlie's passion for bentwood installations. We were flies on the walls of the Whinney Studio workshop. That alone was an eye-opener, his rustic, ordinaire style quite unexpected when you see his remarkable furniture and installations.

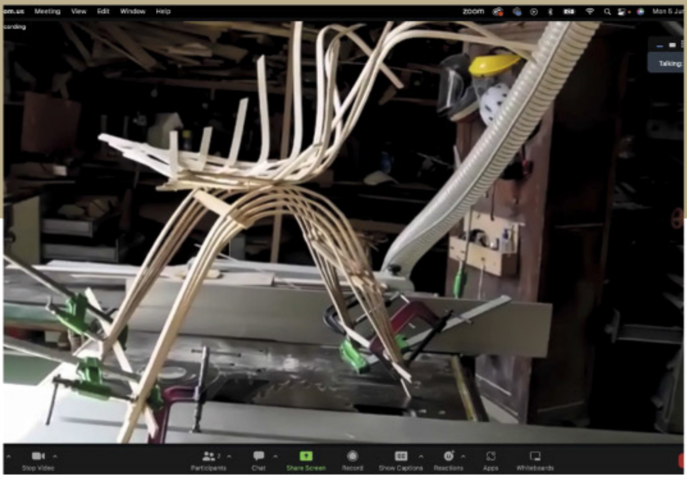
"The Friday was really cool," says Louise. "The first hour was Charlie taking the group out into the woods to talk about trees. We watched a couple of pre-recorded videos of the same thing, covering the basics of tree growth, what woods work better and how to choose or identify a good tree for bending." The esteemed designer-maker, David Colwell, who is known as a pioneer of modern steambending techniques, gave two talks, and there were demonstrations by Charlie on the design and use of his jigs, and techniques for creating free-form bends using glue or by drying.

Fortunately we did join all of the final day, on the Monday, when Charlie spent the first couple of hours demonstrating his key techniques, including the impossible tenon joint, when he forces a through tenon to lock itself beyond the mortice by steaming. He also showed how he laminates strips with PU adhesive, showing the brilliant tip of wearing two layers of latex gloves for applying the glue and the pressure, to protect the cramps and your hands from the stains that are impossible to remove. Then there's the design and making of chairs by the students in groups employing exactly the techniques Charlie has just shown. Brilliant.



Considering a Zoom class was new for Charlie, this went well enough, except for participants so often blocking the view (above) just when action was taking place. It is a small price to pay for spending a few days in the workshop of an inspiring man.

Visit charliewhinney.com for details.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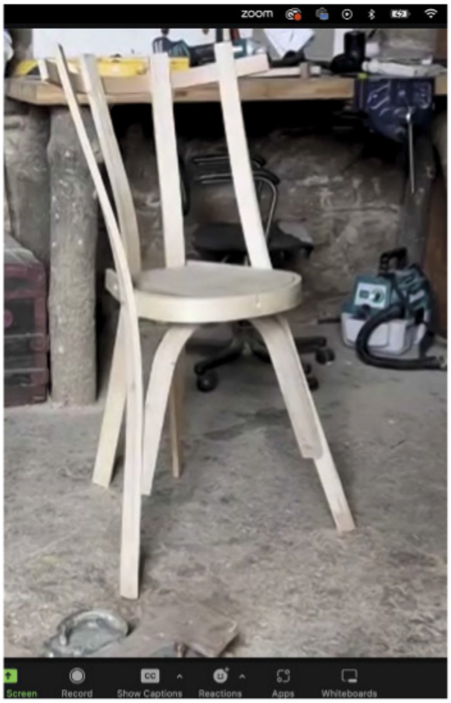
Chair Bends

On Day Four of the long-weekend course three groups of live students were formed to design and make chairs using some of the jigs and materials Charlie had been teaching them how to use and employ on the morning of the final day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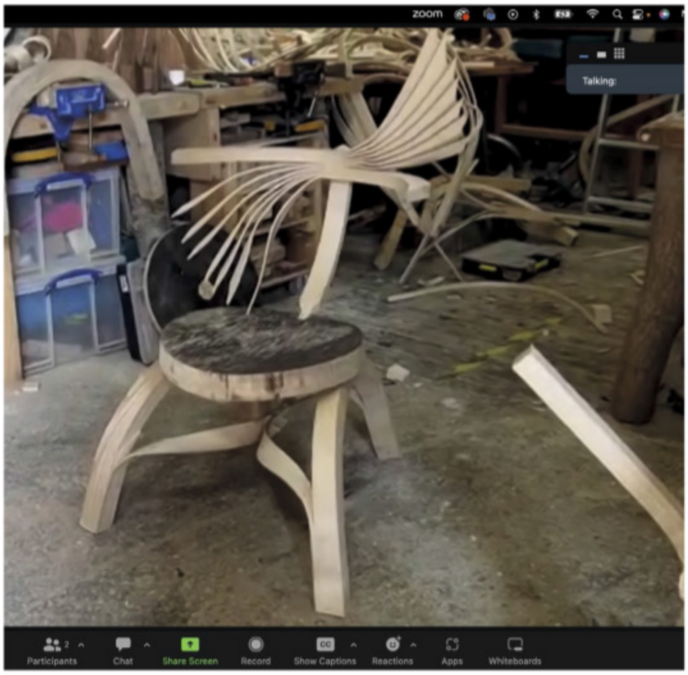
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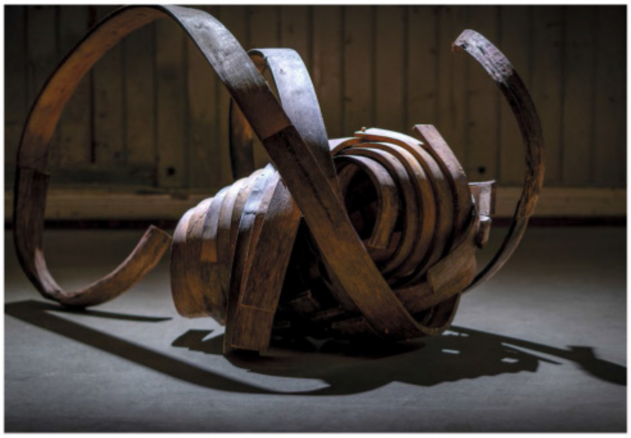
Lovisa Johansson

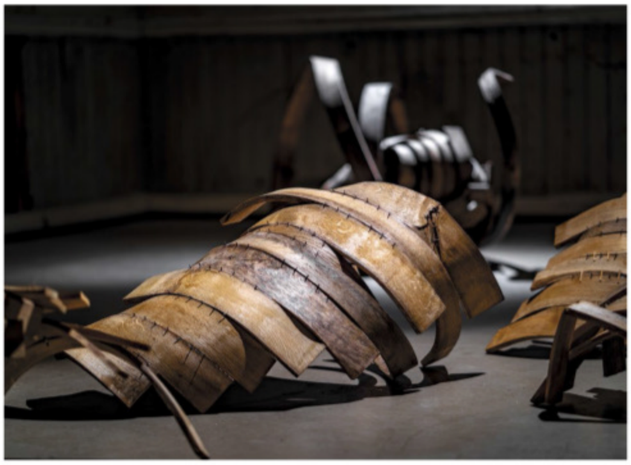
The Swedish artist presents her 2022 exhibition pieces



PHOTOS: INU ENESCU

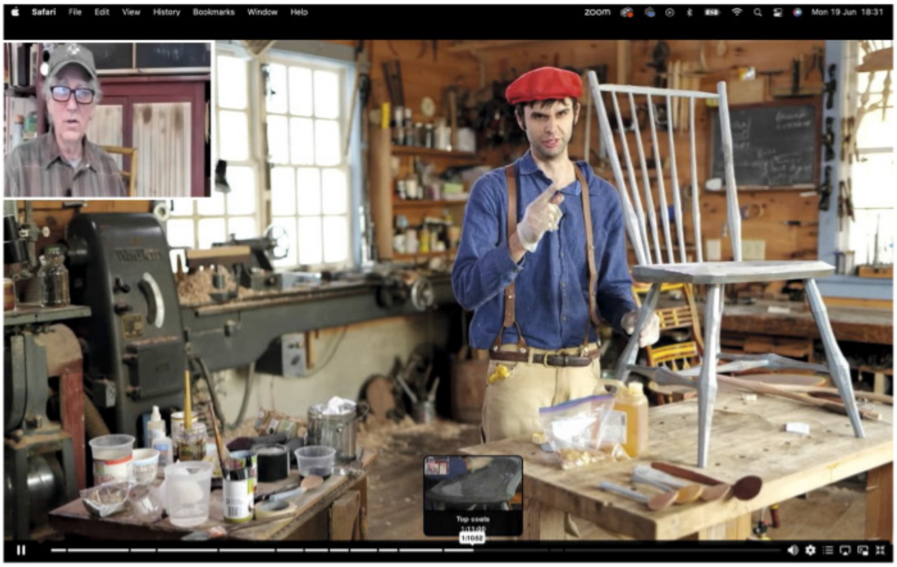
Larger Oakipage by Lovisa Johansson (right), one of the Charlie Whinney's Zoom students, are made in green oak and shaped with jigs and free-form bending. Lovisa learnt techniques at an earlier workshop In Real Life. "In the beginning I was looking for pieces with straight grain. This is the wood that is easiest to bend. But when growing more comfortable with the technique, I started to embrace the expression I got from the wood that is less 'perfect'. I recognised some aspect of life within the cracks and the knots. I enjoy building objects in the same way that a plant or a tree grows. The basic idea is enshrined in the seed, but the final shape depends on a web of circumstances."

Visit lovisajohansson.myportfolio.com to see more of Lovisa's work.



Curtis & Elia Meet Again

For an online lesson on finishing with milk paint, *Curtis Buchanan & Elia Bizzarri* are a double act again



Elia and Curtis focus on painting a chair with milk paint, and discuss choosing a suitable top coat

As Part Seven of their Democratic Chair Online Class, Elia Bizzarri and his guest star Curtis Buchanan turn to finishing with milk paints. From North Carolina, Elia, in his red beret, acts something of the sidekick, forever smiling, forever happy to admit mistakes as he fumbles around his workshop. There's a touch of theatre, viewers surely convinced they're being watched, eye-to-eye, by the lanky American, like a cheerful schoolmaster pushing his pupils to try something new.

Across the way in Tennessee, in a window on the screen, Curtis opens by telling his audience why we might cover our handiwork with paint, such an unlikely thing to do. "We've got this beautiful wood and now you are proposing the we're gonna cover it up with paint?" puts Elia, as if opening a debate. Curtis argues that function beats form when it comes to making furniture. Chairs, he says, comprise a potpourri of wood species to meet specific needs, whether for bending, splitting, shaping, or to be strong, comfortable and not so heavy they can't be picked up from the dining table and taken to the veranda.

"I'm asked the same question over and over," Curtis adds, "and the question is always from Windsor chairmakers, 'Why do you paint? Why do you paint? Why do you paint?'. Finally, with one person at a show I'd just had it, and I replied: 'Because I hate wood.'" They both chuckle, as must the viewers.

"With Windsors we want to make the best chair possible. We're choosing wood for its function, just its function," Curtis says. "I don't care what the stuff looks like." Paint not only covers those inconsistencies, mismatches as they may be, it also makes more of the design and shape of a chair, unfettered by grain or glow. "When I am designing traditional Windsor chairs I'm only thinking about one thing and that is the lines, the negative spaces and the positive spaces. You want those lines to be shown off. Natural woodgrain draws the eye from that."

To that end, Curtis advises chairmakers to paint a mock-up or trial piece black to see the lines and ask oneself if you have anything, that the timber is worth choosing. "If a chair can't stand on its own it's a waste of good wood," he says, concluding his thought-provoking monologue, at which point he and Elia agree that milk paint is best because it is thin and, as if accepting a compromise, because it "still looks like wood."

Though in the UK Cornish Milk Paint is growing in popularity, according to Elia there's only Old Fashioned Milk Paint and Real Milk Paint on the market in the US. Surprisingly, and perhaps disingenuously, neither seems to have used the Real stuff; never according to Curtis and only to find it too hard says Elia. Typically as a professional woodworker, Curtis says that Real Milk Paint came out 15 years ago, "and I haven't tried it because Old Fashioned is really good."

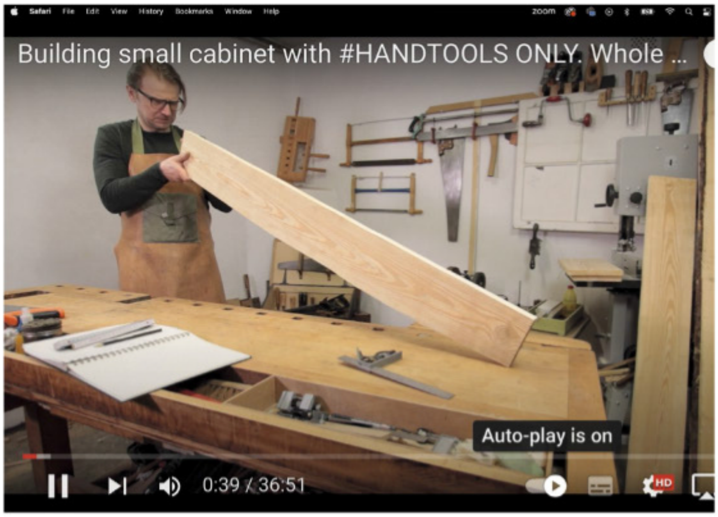
Whatever your poison, henceforth anyone wanting to embrace milk paint will learn all the basics and refinements of preparing your surface, whether sanded, scraped or straight from the tool, and the science of mixing and applying the chalky finish. Wisely, doubtless with their least able pupils in mind, the pair start painting a spoon; Curtis having only started making spoons in Covid, decorating his to make them stand out. Once they've conquered that, the pair starts finishing a chair, the second half focusing on top coats, by which they mean shellac, or oil or something else. "I have tried 37 top coats," says Curtis, "and still can't find the best." Elia is more selective, recommending the Swedish boiled linseed oil made by Allback, or a visit to shellacfinishes.com.

The clever, amusing two-hour class concludes with half an hour of questions from the virtual floor, Brian asking if Curtis has changed his sequence since a film he'd watched in the past. "That was 10 years ago," the great chairmaker replies, admitting that he does now add more water to paint a wash coat that reveals faults or flaws, before he ends, with age in mind, "but it would be real painful to watch again."

To join an online class, live or later, visit handwoodworking.com where you can also order a place on an In Real Life lesson from 2nd-7th October, Make a Traditional Wheelbarrow with Peter Ross, which includes some blacksmithing techniques to learn.

Lukasj Giergasz

The Armchair Woodie follows his YouTube hero


Building small cabinet with #HANDTOOLS ONLY. Whole ...

After enjoying the recent delightful weather, a thunderstorm broke and forced me indoors to write my latest contribution. I mused on what subject I might cover and serendipity provided me with a wonderful opportunity: Lukasj Giergasz had just posted a new video on Youtube. I think it represents what many hand-tool workers seek from the Internet, a chance to imagine and hope that with our modest resources and limited time we too can create something of quality. He sets out to make a small wall-hung cabinet from readily available material (white pine) and sets out to do so with a limited hand-tool selection.

The videography is high quality with no grating narration simply some limited music and the sweet sound of a sharp plane. Lukasj cleverly shows us a number of skilled techniques in the construction process initially including the flattening of a twisted board. Later he utilises his shooting board and makes a delightful stopped dado. As the build progresses he is seen resawing the rear board of the cabinet into butt and bead book-matched halves with a Bahco saw!

There is something to learn at every juncture as he shows the light yet confident touch of a skilled woodworker. He works without haste with the rhythm of a contented man making for a very enjoyable and relaxing experience and this perhaps is the nub of his appeal.

Inevitably a few adverts pop up but the alternative would be a pay-to-view model. Later in the build we see a lovely bridle joint in the door frame which is superb and a well-loved wooden rebate plane in use. As the glue-up progresses he shows his hide glue warmer (an electric baby bottle warmer) which I rather covet. He creates bevelled edges and when break-out occurs is honest enough to show the repair. The final details are well-judged, including rose-head hand-cut nails and a beaten copper handle.

I thoroughly enjoy his work and feel he has hit a well-timed note within the Internet content world which is that of beautiful hand-tool carpentry which is accessible with commonplace tools and inexpensive material.

Watch https://www.youtube.com/watch?v=IQbyPg2L-vU

Schwarz's Vice

Following blogs can lead to valuable tips

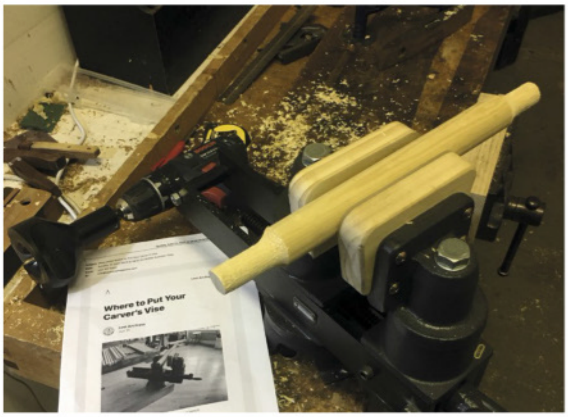
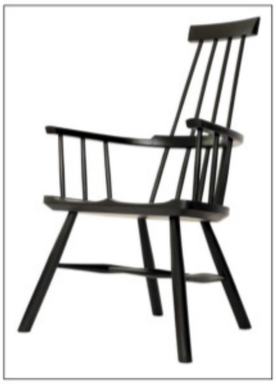


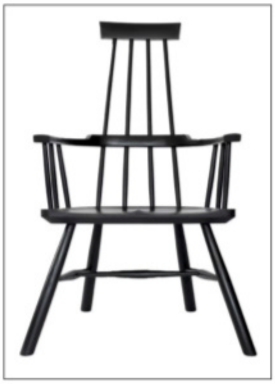
PHOTO: NICK GIBBS

Like many readers, *Quercus* follows the Lost Art Press blogs by Chris Schwarz, and recently noticed a challenge to find the best location for a Carvers (or Pattern-Makers) Vice on the bench. Considering one must probably drill a hole through the top, unless there's a dog hole the right diameter in the right place, this is a big decision. "Here's my thought," Chris writes. "Put it at the end of your bench, where a tail vise would go." Chris suggests the hole is 3-4in in from the bench front and end, where the metal base can sit, and from our bitter experience don't forget you'll need space underneath for the long shaft and for the heavy 'butterfly' locking nut.

The purpose is to speed up cutting with a tenoner, so you can angle the vice at 270^{0} across the end of the bench (as above) to cut both ends of a stretcher in one sitting. He's right, *Quercus* now knows, it will save chairmakers valuable time. On which point, another June blog entry showed a stunning stick chair made in Wales by Chris Williams and taken to the USA with him when running an LAP course. The chair is a wonderful contemporary interpretation of the classic style. "I follow the tradition that the armbow dictates the shape of the seat," writes Chris Williams in the blog, "which makes Welsh chairs visually and uniquely distinctive from other chair styles."

Visit Chris Williams at welshstickchairs.com or follow on Instagram instagram.com/welshchairmaker/.





CHAIR PHOTOS BY CHRIS SCHWARZ

Going Dutch

Aiming to learn how to repair a knot or a crack, *Ethan Sincox* turns to inlaying Dutch style

If you've been woodworking for any significant time, you'll know that the wood you have at hand is not always the piece of wood you really need. While I've not yet figured an easy way to make a board longer or wider, I won't discount it completely it if the wood shows a knot or a crack.

If the board I want to use would impact structural integrity because there is a knot where joinery needs to go, then I'll use a different piece. But if I can use that board somewhere else in the project where it can be visually minimised with a Dutchman patch, then I will still use it.

The same is true if there is a split in the grain, which usually happens near the end of the board. As long as it doesn't interfere with joinery or design, I can stabilise the split with a butterfly. In Part 1 of this article, I will discuss the Dutchman patch and in Part 2 will cover the butterfly patch.

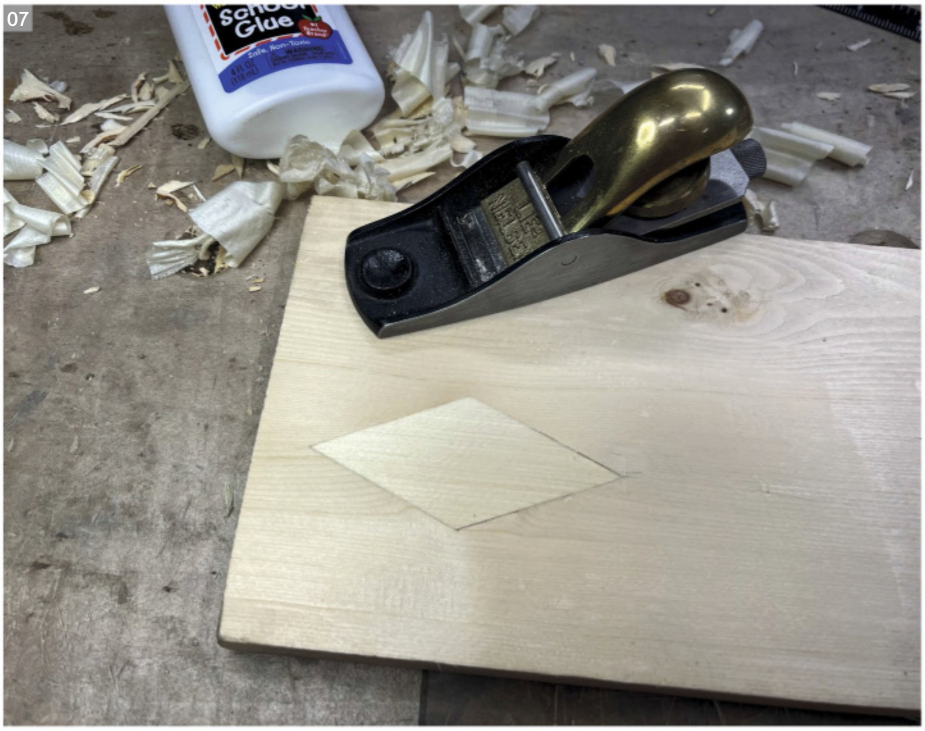
The term 'Dutchman' most often refers to a woodworking or boatbuilding repair, but it is also used in other fields, such as theatre, masonry, and railroading. For anyone unfamiliar with the term, a Dutchman repair is when you replace a damaged or unsightly area of material with a more appropriate piece. This type of repair is not usually structural in nature; it is more of a cosmetic change.

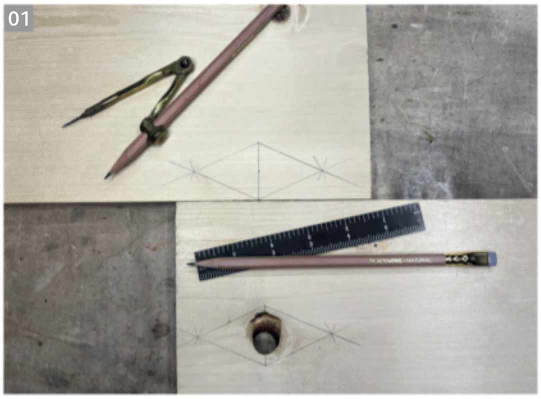
Patching Up

The Dutchman patches I see most often are square, laid out with two of the edges parallel to the grain and two of the edges perpendicular to it. The biggest drawback to this layout is that even if the woodworker expertly matches the grain of the Dutchman with the surrounding surface, the viewer's eyes are drawn to the stark parallel lines crossing the grain.

One way to create a more innocuous repair is to use organic- or diamond-shaped patches. Organic shapes can be made to blend in by following or mimicking the surrounding grain. Patches like this are generally more difficult to accomplish because the lines are rarely straight. A somewhat easier method involves laying out a diamond patch such that the long axis is parallel with the grain in the board; the edges of the patch do not stand out quite as much because the lines of the acute angles of the diamond do not cut straight across the grain.

The process of inlaying a Dutchman patch is straightforward. In this example board, I used a piece of pine from a slightly lighter board and reversed the grain for visual purposes. I was worried that the pictures might not be clear enough otherwise. If I was making this patch for an actual project, I would try to use an offcut from the same side of the same board, if at all possible. This increases the likelihood that the colour, the chatoyance, and even the grain to some degree, will match. This also helps to ensure the grain direction matches, which helps if you are a hand-tool woodworker and intend to level the patch with a plane.

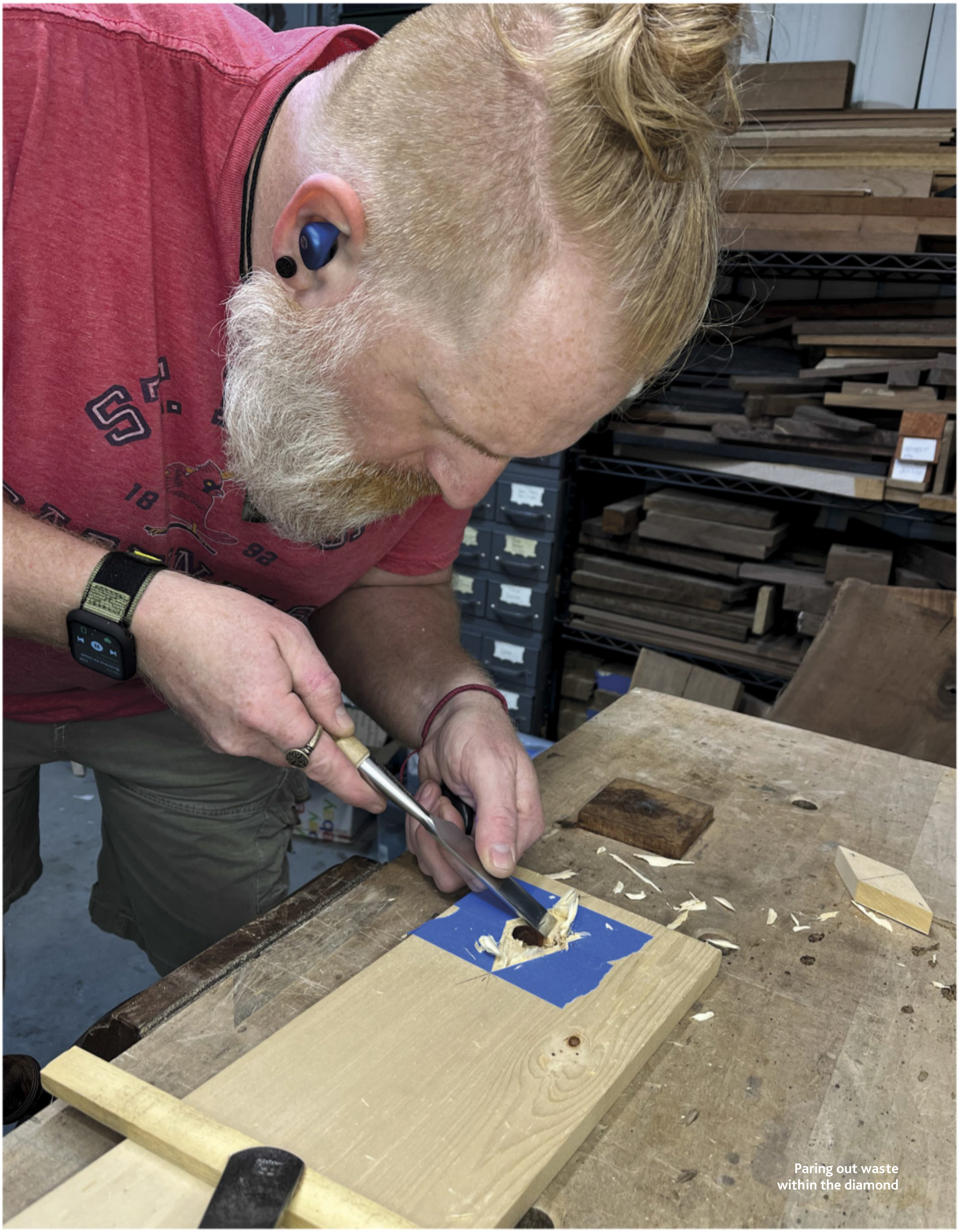




A block plane can be used to level the patch (above), so long as there's a fresh edge. Drawing the patch (left) to cover the damaged spot

Inlaying a Dutchman

1 Determine the size of the patch needed. In this example, I measured the diameter of the knot hole and added ¼in to each end to come up with 1½in. I drew this vertical line on the project board and then set a compass to 2in and marked the left and right points of the diamond using the ends of the vertical line. Connecting these



Paring out waste
within the diamond

lines gave me a visual reference of the patch shape to make sure it would work. I duplicated this process on the patch board; and this gave me the outline of the patch I would be needing to cut out.

2 Cut out the patch and clean up the edges. Whether you cut out the patch with a handsaw or a bandsaw, you will need to clean up the edges. I used a block plane to remove the saw marks in a little less than a minute. As long as you always plane towards the tip of the acute angle, you should not have any problems with this step and will end up with crisp edges and clean points.

3 Transfer the patch shape to the project board. I laid blue painter's tape over the area where the patch went on the project board. I made sure the end points of the reference shape I'd drawn earlier were visible so I could place the patch exactly where it needed to be. Then I used a marking knife to cut around the edges of the patch, only scoring lightly to go through the tape without cutting into the wood, as much as possible. I removed the tape from inside the diamond shape to show me exactly where I needed to remove material for the patch.

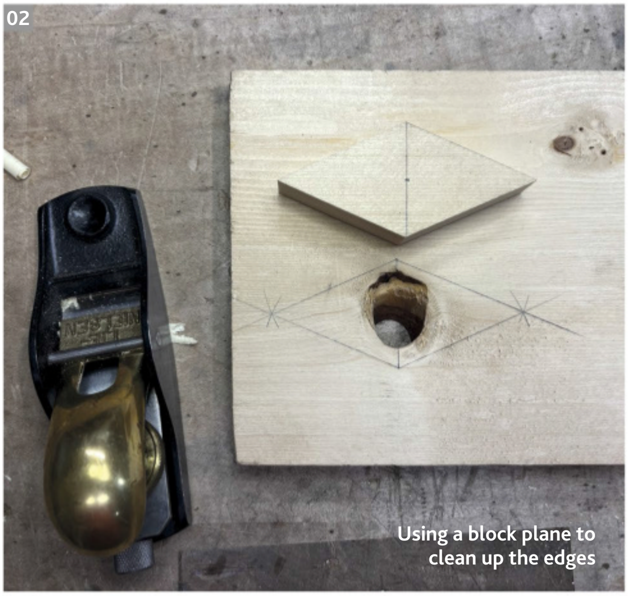
4 Define the lines. I used my marking knife and a small steel ruler to deepen the four lines of the patch. I didn't want to score too deeply in Step Three because the bevel of my marking knife was facing outwards as I cut around the patch, keeping the flat of the marking knife tight to the sides.

But in order to make the patch as tight fitting as possible, you want the bevel of the knife facing the waste. So when I deepened the lines, I put the steel ruler on top of the blue tape and put the bevel of the knife facing the waste.

5 Remove the material from the project board. With the borders properly defined, I used a 1in chisel to pare a small bit away from the outline, similar to how one might prepare for a first class saw cut. I always kept the sides of the chisel perpendicular to the outline for this part. This created small triangular slivers of wood that easily popped out. I continued deepening the outline and removing waste along the outline until I was close to the depth I wanted, which was enough to leave the patch proud of the surface by 1⁄16in or so. Then I switched to a small router plane to remove the rest of the waste from the middle.

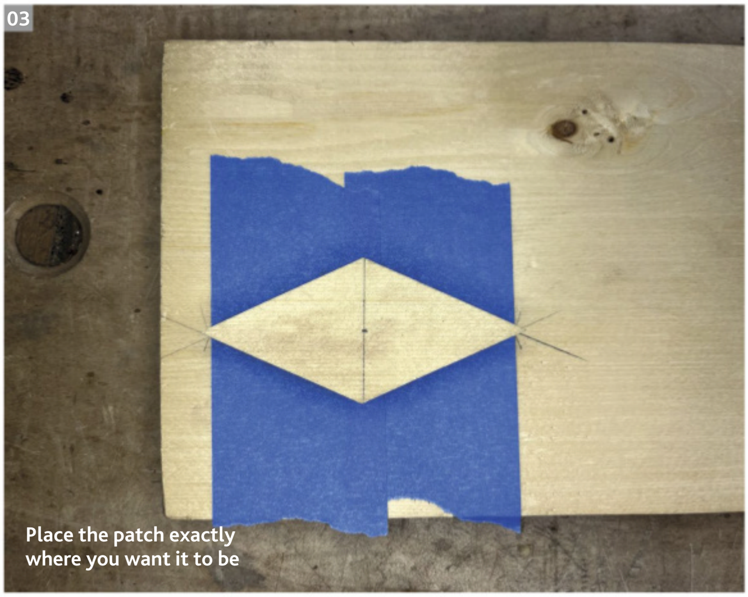
6 Glue in the patch. I kept the blue painter's tape in place when I glued

02



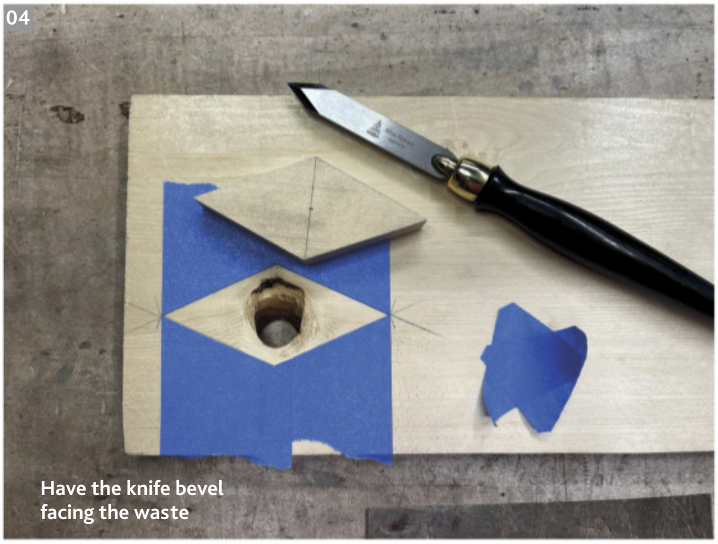
Using a block plane to clean up the edges

03



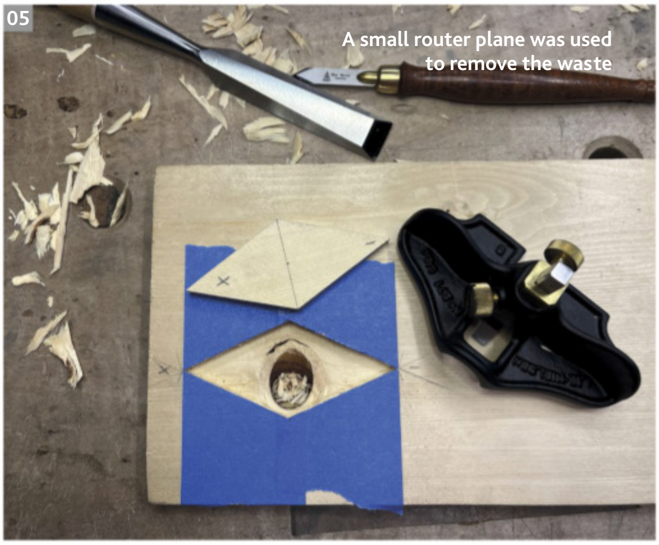
Place the patch exactly where you want it to be

04



Have the knife bevel facing the waste

05



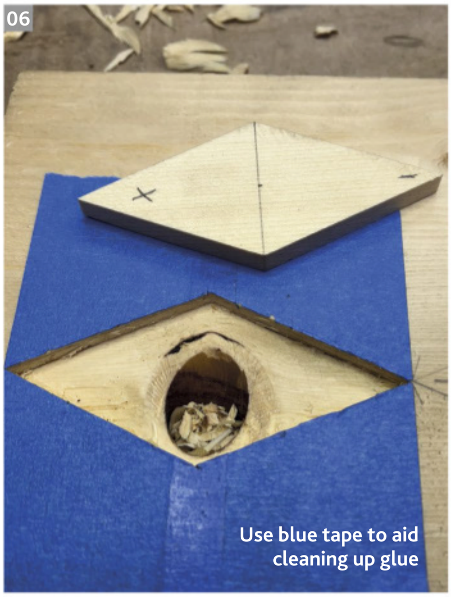
A small router plane was used to remove the waste the patch into the project board because it makes glue squeeze out easier to clean up. If the area you are patching goes through the board, like the knot hole in this instance, be sure and check under the board for any glue before you clamp the board to your bench and end up with a board glued to your bench.

7 Plane the patch flush. After the glue had time to dry, I used a block plane with a fresh edge to level the patch. It took about 20 seconds.

In the second part of this series, I'll go through the process of inlaying a butterfly or bowtie. There are some similarities between the Dutchman and the butterfly, but there are also some differences that are important to cover.

Ethan Sincox @thekiltedwoodworker (IG).

06



Use blue tape to aid cleaning up glue

How to make a butterfly or bowtie patch in QM20

Removing the waste

Finishing Touch

Bill Ratcliffe **wonders how to 'finish' a workbench he had no intention of building**

Andy's bench design was based on books by David Binnington Savage and Christopher Schwarz

Inspiration can cause a chain reaction. This particular one started with a student, a book, a workbench and is then finished with a look at a very appropriate surface finish. I have posted regular updates on Instagram of Andy Flynn making his workbench. He had been on a couple of short courses with me and then he read a book called *The Intelligent Hand* by the late David Binnington Savage. In this book David discussed the importance of having a good solid workbench, in fact the chapter was eloquently titled 'the stone beneath all other stones'.

Andy then asked me If I would consider this as a teaching project and could I also source the timber. He would then come into my workshop once a week over a period of months. I agreed and bought in some thick sapele and beech stock. A great opportunity to spend some time on traditional woodworking.

Then we had the many discussions over the design. We have all had those quandaries, size of bench, should it have a well, a tail vice and so on. We chatted and measured the benches in my shop. You can get wrapped up in some decisions that are less important. I have several benches in my workshops and the one I use the most is the simplest; it is heavy, flat, it does not have a well, no gimmicks, no add-ons, just one good Record face vice. We all work differently, we all make different things, there is no wrong or right here.

I have Christopher Schwarz's books, *The Practical Workshop* and *Workbenches*, so we looked at those and we both gathered info and further inspiration from wherever we could. The final yet fluid decision was to base the underframe on the Binnington Savage design but to adapt it, then make the top simpler without a tail vice. This later became a split top, but we will come to that along with the additional tool holder/planing stop.

Two Into One Bench

The under-frame has a variety of mortise & tenon joints, including stub tenon, through wedged-tenon and through dry-tusk-wedged tenon. I wanted to prepare sample joints ready for Andy and I thought I would make a small-scale demo joint. Then I thought why not take it one step further and make a bench myself, staying one step ahead of Andy. This worked brilliantly as my version was also able to iron out some wrinkles for his version. It also acted as a carrot to keep him motivated not that he needed it at all. Recently he was on a timber framing course where he camped in the Brecon Beacons in his one-man tent and soon followed a day doing wattle and daub walling. I did say a chain reaction of inspiration, tutors should inspire the student but often it works the other way too.

I had some Scandinavian redwood/pine in stock, so I made my frame, Andy's frame is made using sapele. The design has end frames made with a combination of stub tenons and through wedged tenons. Then the long front and back stretchers which link the two end frames, are made with through dry-tusk-wedged tenons. These dry wedges can be knocked out to disassemble. This was a great learning project and Andy got to complete a variety of joints and much of the work was by hand.

Andy's top was made of 60mm beech. I did not have enough beech in stock for mine, as I had not intended to make one, but with a combination of beech and some spare sapele, I could make a mixed timber top. I thought this may make an aesthetically pleasing feature too. This then allowed us to make similar benches but to customise them to suit each of us.

Both benches are approx. 2100mm long and the top surface is at 940mm high. My bench is 630mm deep and Andy's is 720mm.

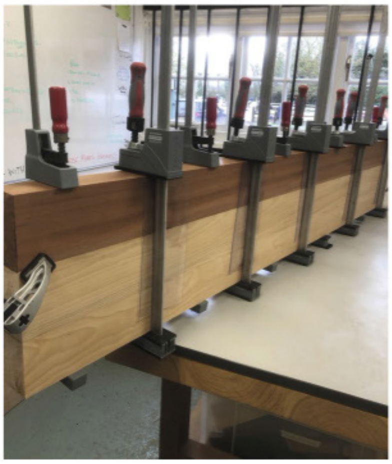
I prefer a simple bench and with the use of a vice and quick release clamps, there are not many clamping scenarios that ☞

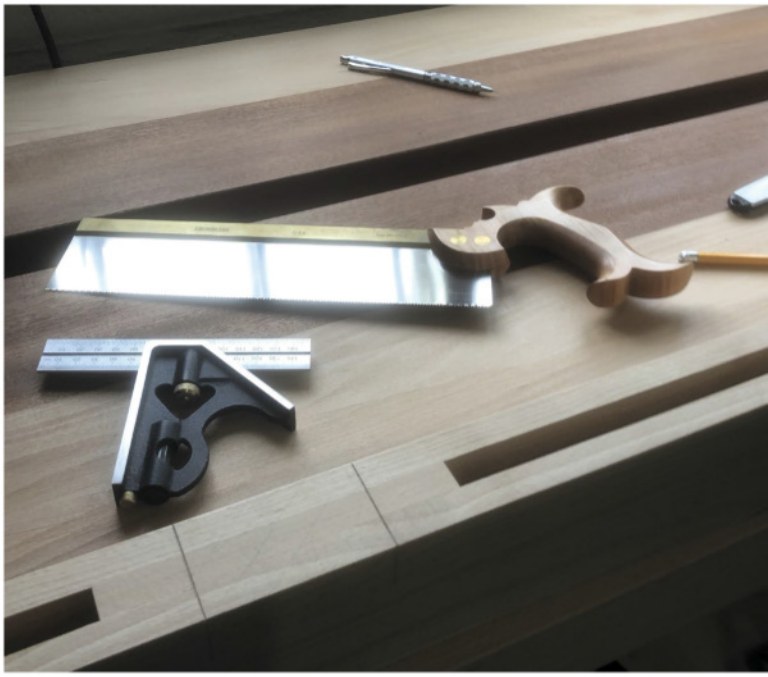
Andy reading the books he and Bill used to research bench design

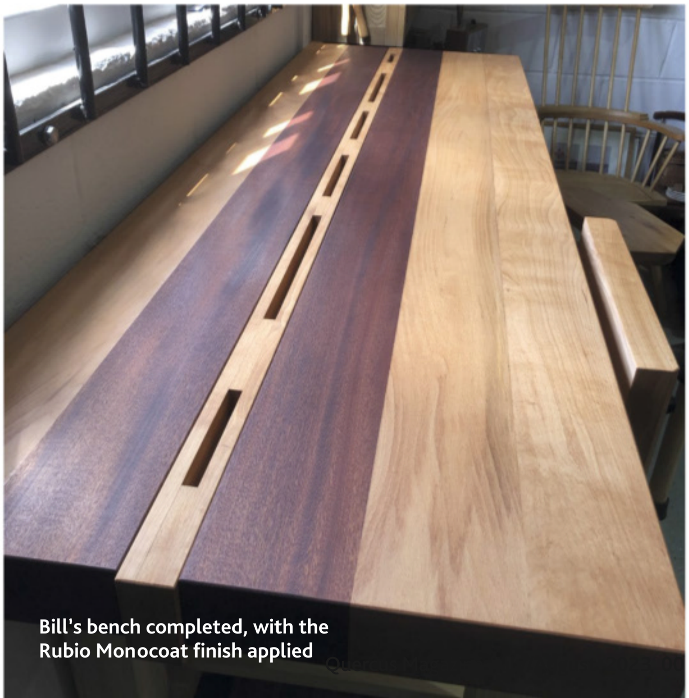
Andy admiring the hefty beech boards and contemplating the challenge ahead

Bench Assembly

A section of Bill's beech and sapele benchtop jointed and cramped (right). Bill was already using his almost completed bench (below) when it came to hand cut the recesses to the underside of the beech tool holder/ plane stop.





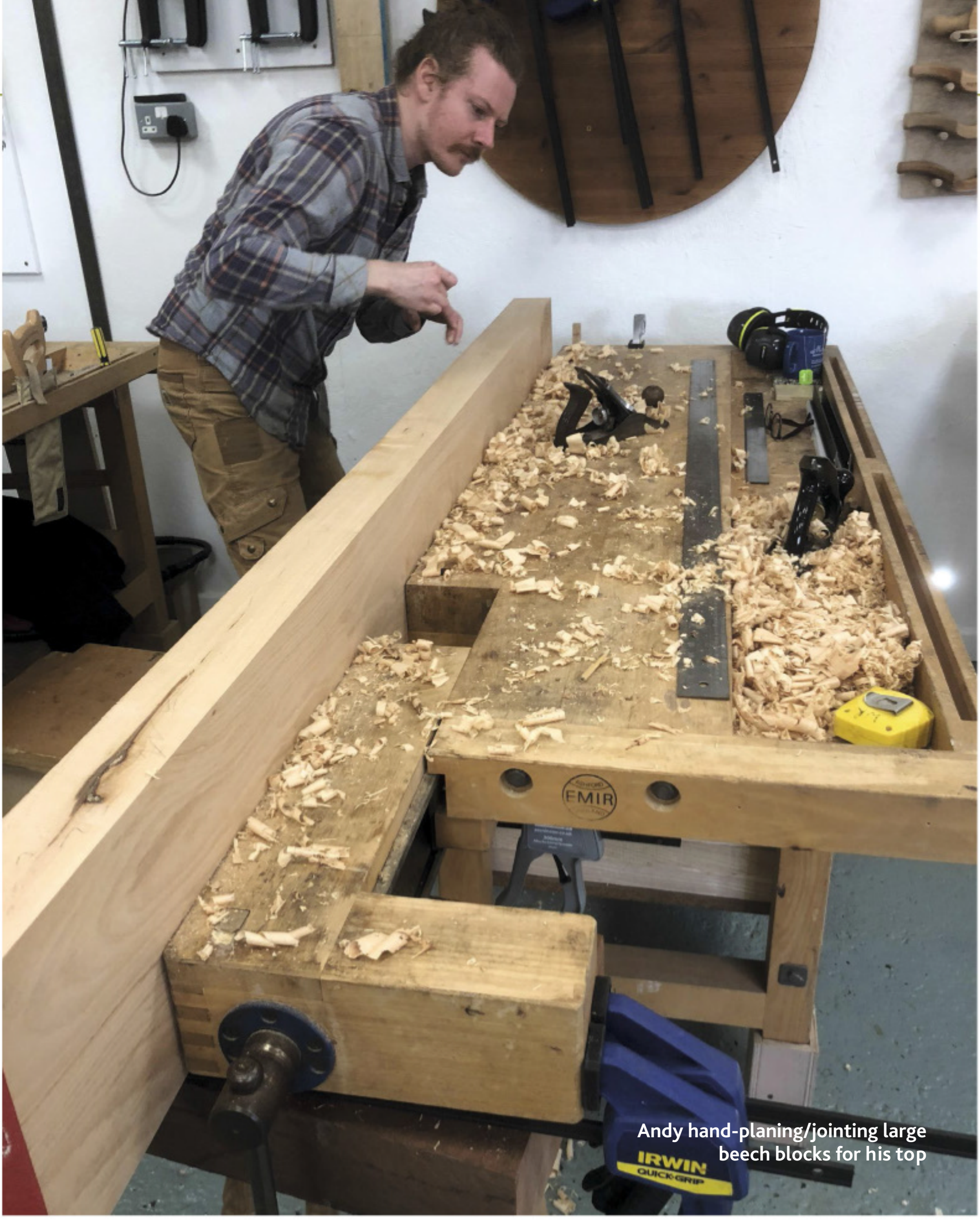


Bill's bench completed, with the Rubio Monocoat finish applied

☞ cannot be solved. I decided I would also make my bench a split top for ease of making and to give clamp access. Later I may add some dog holes, but I will use the bench first; no rush.

I had seen benches with an added feature in the split, a removable plane stop which also doubles as a tool holder. This can be set to sit flush with the bench top giving a whole flat surface when required. It can also be slightly raised to act as a plane stop, either the side stop for longer boards, or the end stop for shorter boards when planing front to back on your bench.

I made this plane stop from beech and cut out the recess from the bottom edge, so it sits in the flush position by locating on the top rail of the end frames. Then you lift the holder and slide a few inches sideways, and it sits up as a stop. This becomes a very flexible feature. If you are making larger items or chairs, you have the whole top flush. Generally, we use mostly the front of the bench so you can leave the holder raised and put your tools in it or in the bench space behind it, between the wall and the holder in my case. The tools cannot roll off and you keep your workspace clear.


Andy hand-planing/jointing large beech blocks for his top

Choosing the Vice

Now came the choice of the vice. Ideally this would have been decided at the outset, but given the spontaneity of the project, everything rather evolved. We both looked at the variety of vices in my workshop and both researched online. I also wanted to have a different type of vice as we can only learn and make comparisons by experiencing. We both went for the Veritas Quick Release front vice. This vice is not cheap at more than £400 but having both got our projects so far, we thought a quality vice was appropriate and I have to say, it is beautiful to use.

As my workbench approached completion and the investment in time and materials was considerable, a bench that had started as a demonstration joint to support Andy's project, now became more important than that to me. This would become my main bench. I moved my old one into my student workshop. I now had another decision to make: what to finish the surface with.

In fact, let's use this opportunity to talk about decision-making. Woodworking is often about decisions. Although we talk about hand skills and hand-tools, woodwork is much more about the head than the hands. Good woodworkers plan, they mitigate risk, and they leave meat on the bones to be removed later, they are patient and know when to walk away to think about decisions but also when to kick on and use creative momentum.

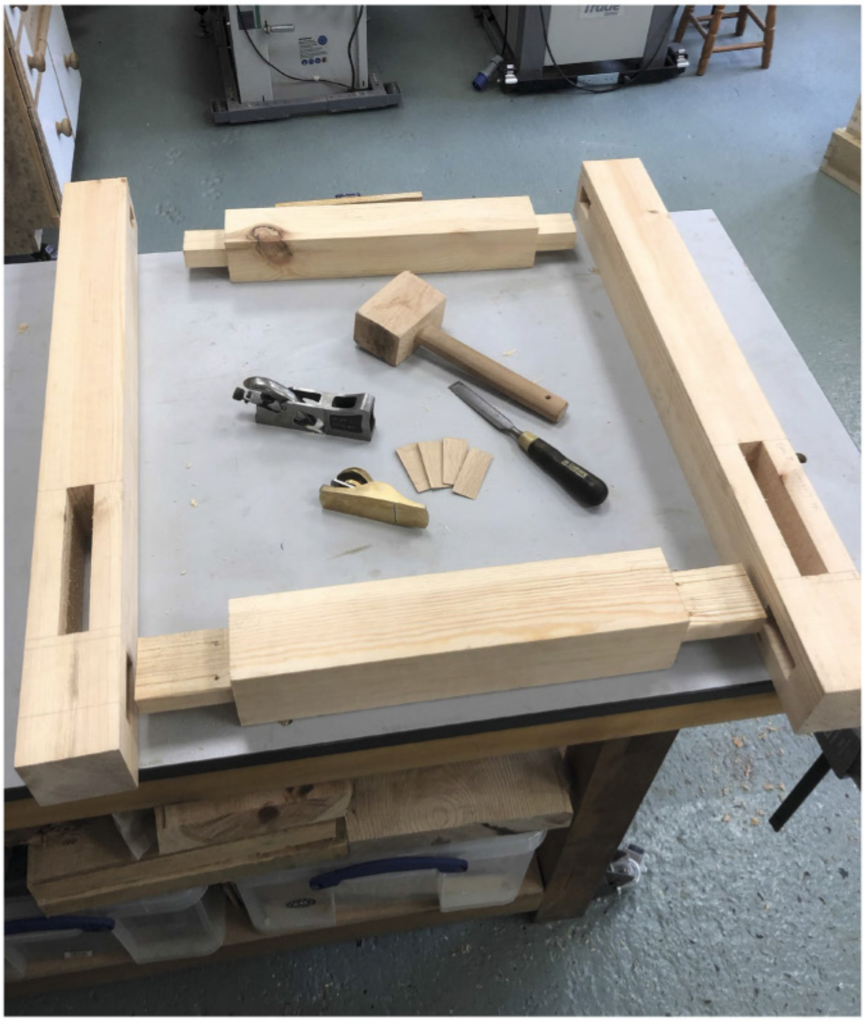
Allow me to finish this piece, both wooden and written, with the surface finish. When it comes to finishing a workbench and many furniture items in general, we are looking for a solution with certain features. Many finishes soak in coat after coat, enhance the wood but offer little protection, others (like varnishes) can be thick and harder to apply evenly and so on. Over recent months I have found one product that answers all my needs. Rubio Monocoat Oil was launched less than 20 years ago and is one of the newer and more innovative finishes. The easiest way to explain why I use it, is to list its key features. Before I do, accept that the finishes main feature is the Molecular Bonding, the finish bonds to the upper microns of the wood, the cellulose fibres, but will not then bond to itself. Hence the name 'Monocoat', ie. one coat. I still find people ask how many coats are required; the clue is in the name.

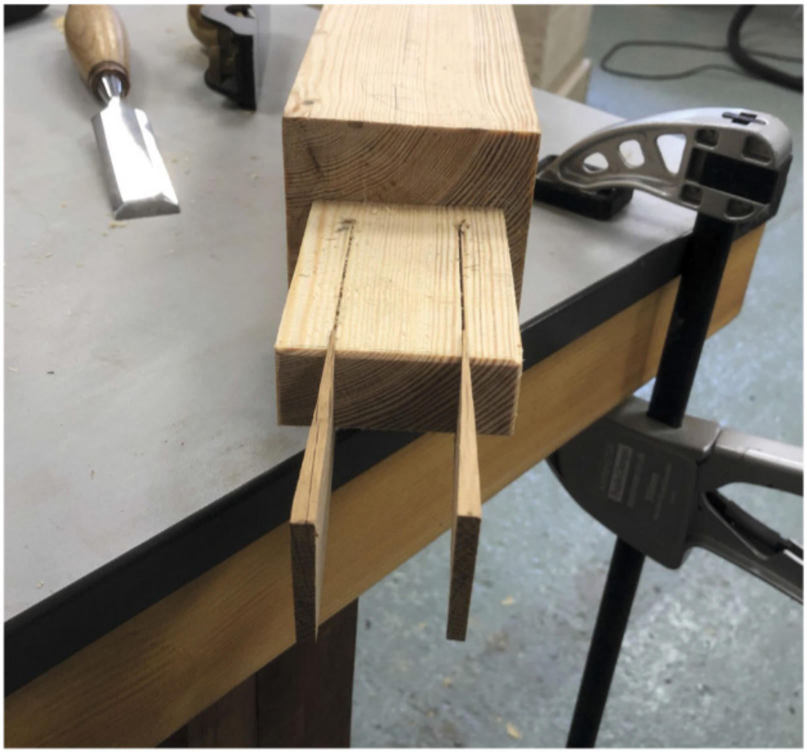
Monocoat Features

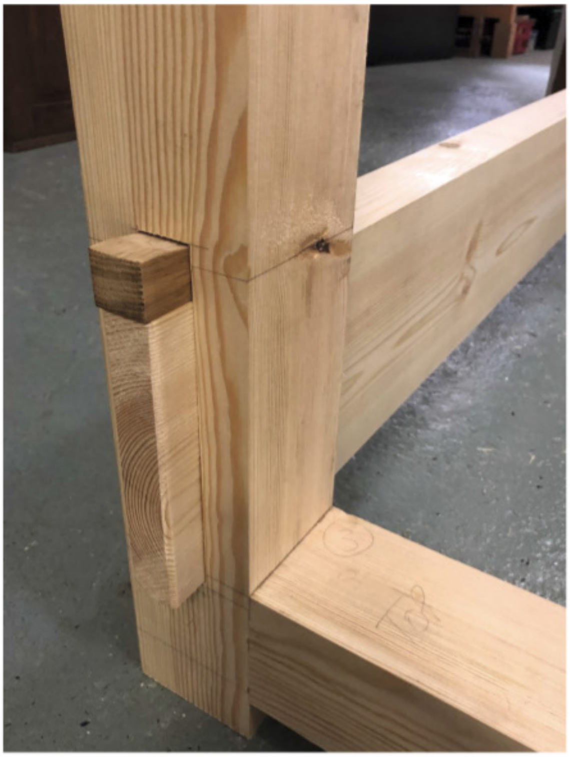
- One single layer. Consumption is lower than for a traditional system. The result is a durable colouring and protection in one single layer. Once the fibres are bonded with the oil, the wood doesn't absorb any surplus product, which makes a second layer superfluous.
- No overlaps. Once all free cellulose fibres are molecularly bonded, surplus product will not be accepted by the wood or the bonded layer of Rubio Monocoat itself. This is why overlaps or starting marks are avoided, making application very straightforward.
- Unique colours. The unique Rubio Monocoat oil pigment technology allows intense and deep colouring in one single layer, without compromising the natural look and feel of the wood.
- Durable protection. The Molecular Binding creates a durable, ☞

Underframe Assembly

Bill's pine frame ready for assembly (right) and assembled with the dry tusk wedges (bottom right) and the wedged tenons ready for gluing (bottom). Bill adjusting hand-cut tenons for the long stretchers (below).







Andy fitting his Veritas Quick Release vice

☞ long-lasting protection. To obtain this molecular binding it is very important to respect a reaction time of a few minutes. The better the fibres are bonded, the stronger the protection.

- 0% VOC just natural ingredients. Rubio Monocoat oil does not contain any water or solvents and is based on natural ingredients. This means that the product is very safe to use, and equally safe for your environment.
- All wood types. Rubio oil can be applied to most wood types, furniture as well as floors & stairs (solid wood, veneer, MDF).
- Easy to maintain. Surfaces are easy to maintain, and isolated scratches or damaged areas are very easy to repair.

The range for interior is 'Oil Plus 2C' but Rubio also supply a range of exterior oil finish called Hybrid Wood Protector. They also do a wide range of supplementary products, for example, applicators, fillers and wood cleaners. I would add that this product is so easy to apply and that means you can use many methods of application, brushes, flat spatula or one of the many 'scrubby pads' available from Rubio.

I chose this finish after testing and researching for many reasons: easy application, easy maintenance, durability, environmental credentials and the way it enhances the grain. I tested the colours on offcuts and the 'pure' was exactly what I was looking for, it enhanced the sapele and the beech, without yellowing the lighter wood, as can happen with many other oil-based finishes. I was also not looking for a shiny slippy finish as a benchtop needs some grip, I also wanted a finish that would have proper protection, a finish for high traffic areas of flooring is ideal.

There are a large range of colours from standard wood tones through to vivid colours where you can let your creativity flow. The Molecular Bonding comes into its own when adding stronger colours. We all know how careful we must be to get an even application and no overlapping, leading to patchiness. This colour will only bond once to the upper microns of the wood and the rest will be wiped off as surplus.

Another factor when choosing a surface finish are the drying and curing times. Some oils remain sticky for days and the odour can be pungent, they also have any dust in the workshop settling on them, which can stop you doing other tasks. Rubio is fast curing, particularly if you add the accelerator to the mix. Rubio state that the oil is 'dry' in 12-24hrs. My workbench was touch dry in an hour. Rubio state that curing when an accelerator is added, takes five days but it reaches 80% curing in two days.

Rubio have an informative website (rubiomonocoat.co.uk) with videos about various techniques, and lots of product knowledge and tips.

Final Thoughts

I had some great feedback on Instagram, and many said in a complimentary way they would be afraid to use the bench in case they damaged it. My thoughts are that it is made to be used and if it gets general wear and tear that is good, if it is damaged through carelessness then that is your own fault. Having a nice well-maintained bench surface is important for a number of reasons. The bench is the common denominator of all your work and if you feel you have something worthy of looking after, this encourages careful working and will reflect in your projects. Having an inspirational workspace can only make your work more enjoyable and inspire you to make even more beautiful objects. I also think that if you have made your own bench, you appreciate the work required to do so, and you look after it better. A bench is a tool, and we should respect our tools and materials.

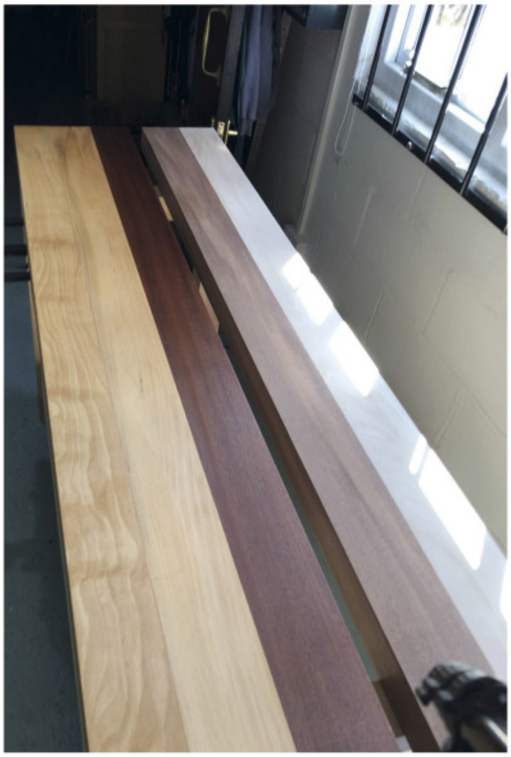
I am not saying that good items cannot be produced from, let us say, a less attractive but more battle-scarred bench. Sometimes we must use whatever we may have available, and I know I am lucky to have more space and benches than most. That was not always the case though. I have worked in a small shed, and I still took pride in everything just the same. I see so many examples of workshops with nice tools, but the bench is abused and so covered in glue, it resembles the barnacle covered hull of a fishing trawler. Putting any freshly planed piece of timber down on it and it will be damaged easily.

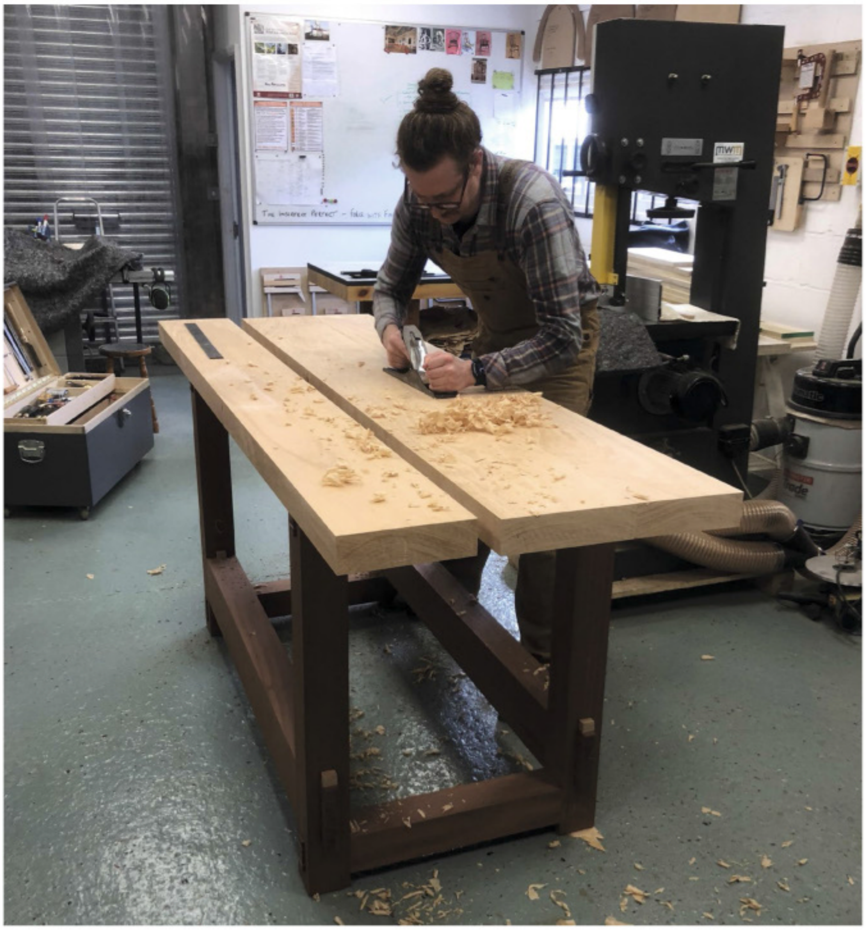
I now love using my new bench and Andy collected his at the end of May. He unbolted the top but did not have to knock out the wedges as it fitted in his estate car easily. Once home the top was refitted ready to do some final work on the top surface and then get his Rubio Monocoat applied. I am looking forward to seeing how that sapele base looks against the beech top. He did a great job, and we had plenty of laughs throughout the project.

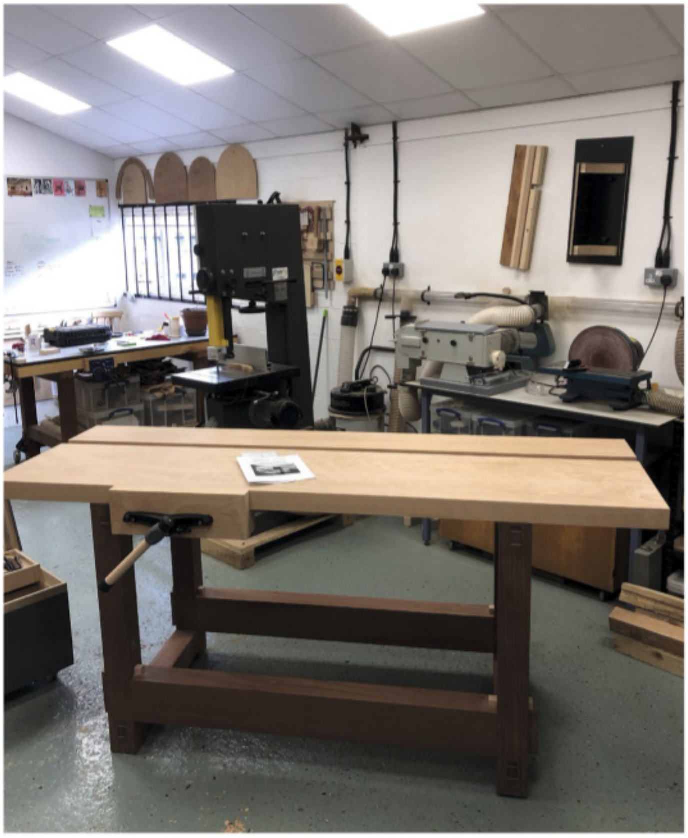
Bill Ratcliffe @cravenconservation. For more Rubio details visit rubiomonocoat.co.uk.

Finishing the Benchtop

Rubio Monocoat Oil 2C 'pure', applied to the front section of the benchtop (below). Note the contrast. Andy's bench fully assembled with the vice fitted (bottom left). Planing the top flat (right)







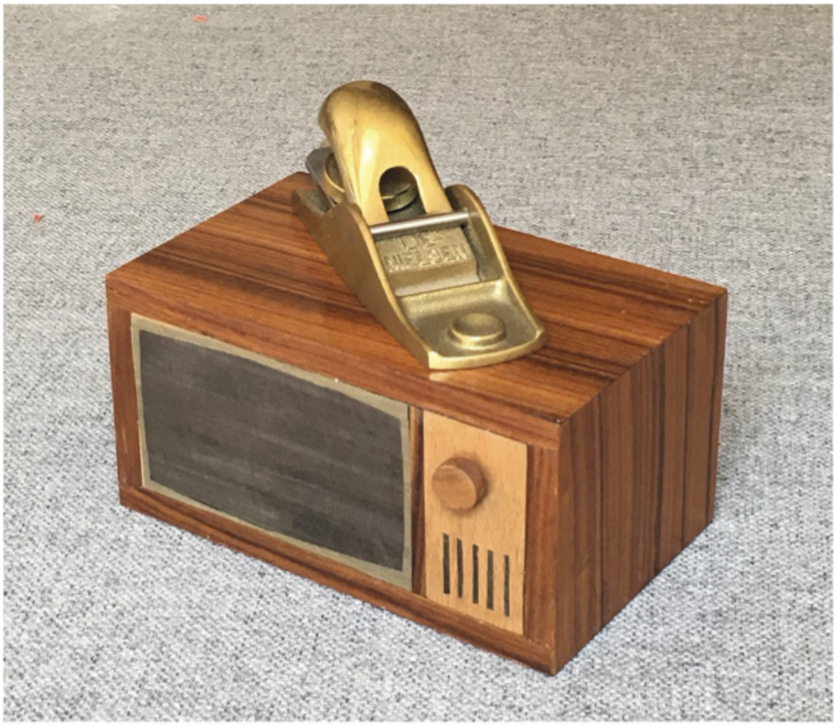
Bill recommends Rubio Monocoat for many furniture-making and workshop tasks, and Rubio offer a range of products for finishing (right).

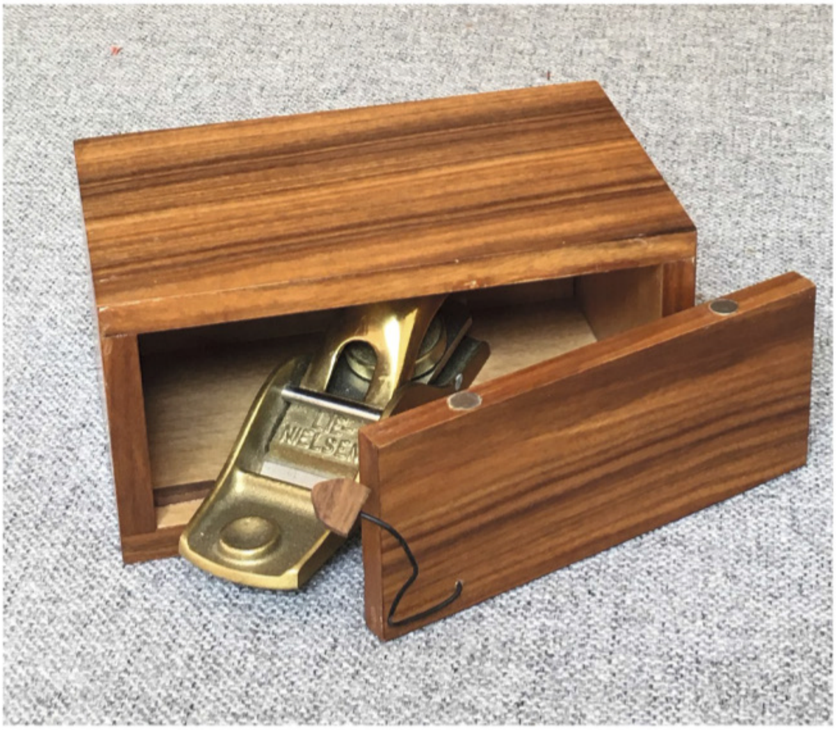
Rubio MONOCOAT
Oil Plus 2C
Accelerator

Taking time to enjoy the process, sitting on the complete underframe, now with removable shelf section

The Boxing Boys

Looking for the winning Young Woodworker of the Year, *Quercus* judges four from around the world





Conor Carbery, Ireland

The youngest of the entrants, Conor Carbery lives in Dublin, and has conceived the most humorous of all the box designs. Replicating an old television set, Conor has devised a veneered box with a door round the back for the Lie-Nielsen block plane. It is exactly this sort of entry that rewards the introduction of this competition. "It's whitty, well veneered and fun," agreed the judges. "Conor has done a great job veneering the box very well, though it's not that practical especially as one might well lose the lid round the back."

Conor is 15, and has been a woodworker since childhood. "The first experience I had with woodworking was when I was seven years old and my grandfather took me into his shop," he told us in his application. "Together we made two birdhouses from some skirting boards. I have been fiddling around with wood since I was 12. My grandfather bought me a set of Irwin chisels and a saw and I went from there."

Like so many woodworkers of all ages, the project was inspired by the materials at hand. "The design for the box had initially been sparked by the outer veneer. I bought it in a bag of scraps and got a strong retro feel from it, and based the design on my interpretation of how a nice retro TV would look. There is a channel selector and a power cable that opens the back panel, which is held in place with magnets. Shuffling through the bag of offcuts I also found a black dyed piece with a strong chatoyonce.

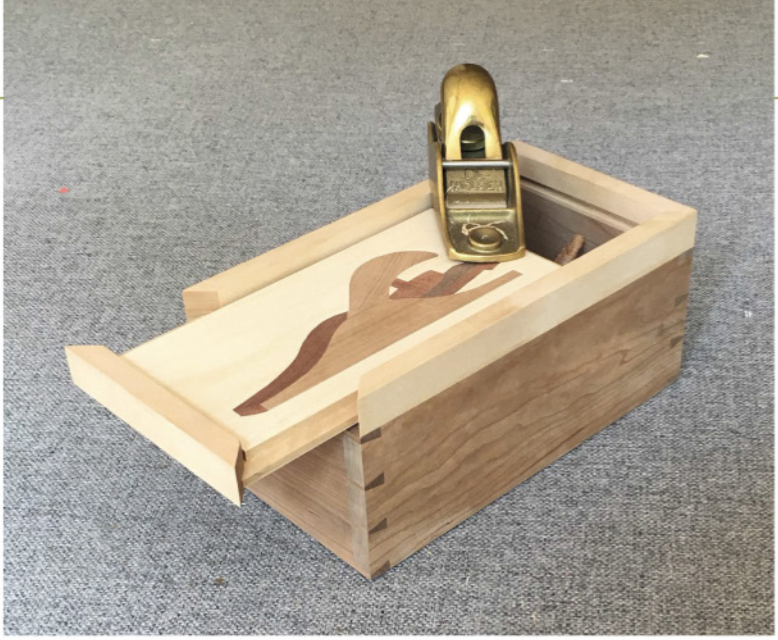
"The box has a birch ply core, with beech on the inside to create tiny rebates. These helped me line up the parts before screwing them together and I then added the veneer on the outside. Creating the front panel was quite simple with layering using a scalpel, instead of the more familiar double-bevel marquetry that I have done before."

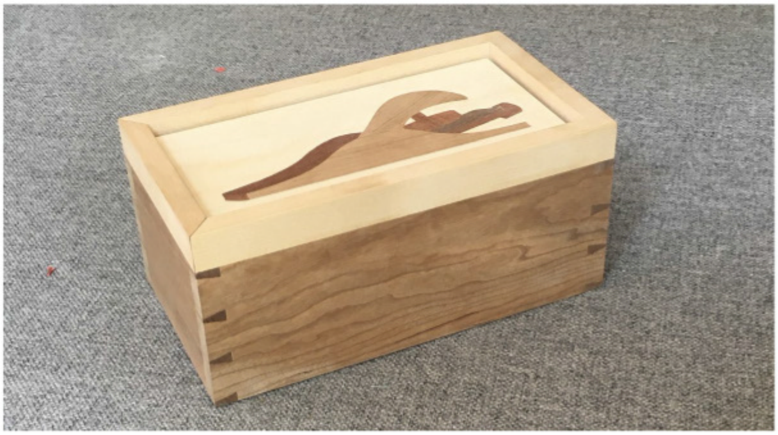
Josef Lorenz, Germany

Aged 19, Josef Lorenz is the eldest of the entrants. This didn't influence the judges, but if we search for a Young Woodworker of the Year 2024, entrants will probably have to be 18 or younger. Josef has already been an apprentice, first as a carpenter and then as a joiner. "I took up woodworking because I always had a knack for practical work, especially with wood," he wrote in his application. "I love wood because it's warm and a natural crafting.

"This project contains everything from planning, designing and calculating to making to a deadline. I decided to make something classic, therefore I chose to make dovetails and anyway they are my favourite of joints. For the lid I wanted to make something special. At first I thought of the Japanese Kumiko, but then decided to make a more European thing. So I made an inlay picturing a Lie-Nielsen plane, because the box is made to fit one of those. I wanted to use only domestic wood, so I chose cherry, because I love the colour and it's good to work with. To make a little contrast I used maple, which is brighter."

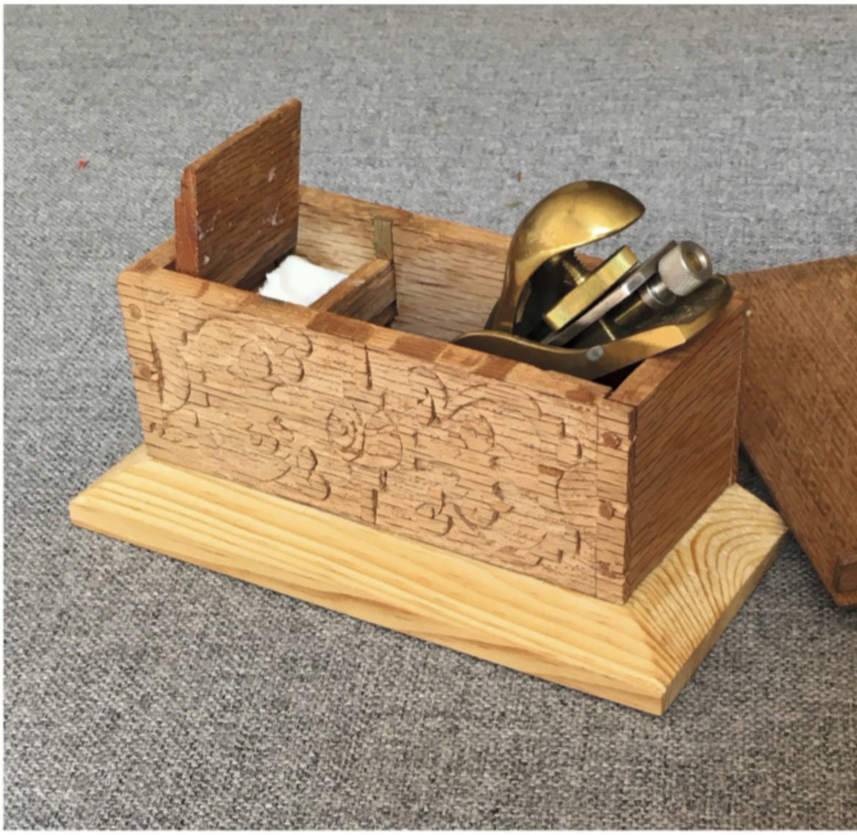
It's hard not to be highly impressed by Josef's entry. The marquetry is nice, and the piece is well made and practical. The dovetails are beautiful and the box is generally workshop-friendly. Yet somehow the proportions aren't quite right, and a bit large for the block plane, though we may not have been clear enough to encourage entrants to design a box for just the one tool, taking up as little space as possible near the bench. It's not really Josef's fault, but the lid was very tight by the time it arrived, obviously reacting to climatic variation, but that can happen in a workshop with, as any woodworker knows, varying temperature and humidity from day to day.

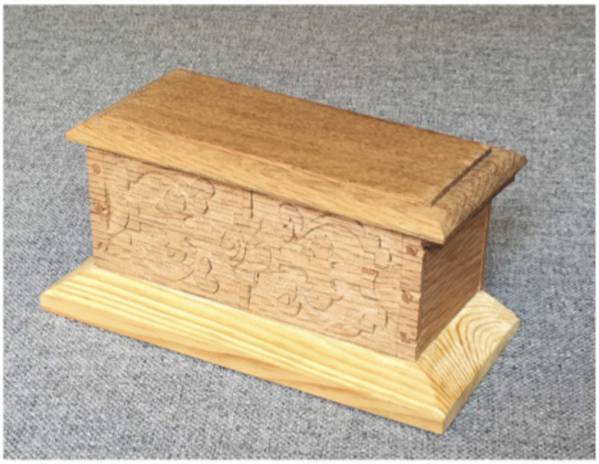




Paul Taussig, USA

Paul's design is based on the 'Bible Boxes' of the 17th Century, with inspiration from Peter Follansbee. "The top," Paul, who is 16, says, "is made of quartersawn white oak, the carcase out of red oak, and the bottom from white pine. The till contains tallow for the plane and should not interfere with the plane's fit in the box. I did everything with hand-tools except for drilling the two holes for the pintle hinge with an electric drill." The judges were impressed by the carving which is nicely done and well tooled, with Medieval touches. The quartersawn oak is lovely, but the base doesn't feel quite right. The fit for the plane is excellent and the tallow section is an ingenious idea.



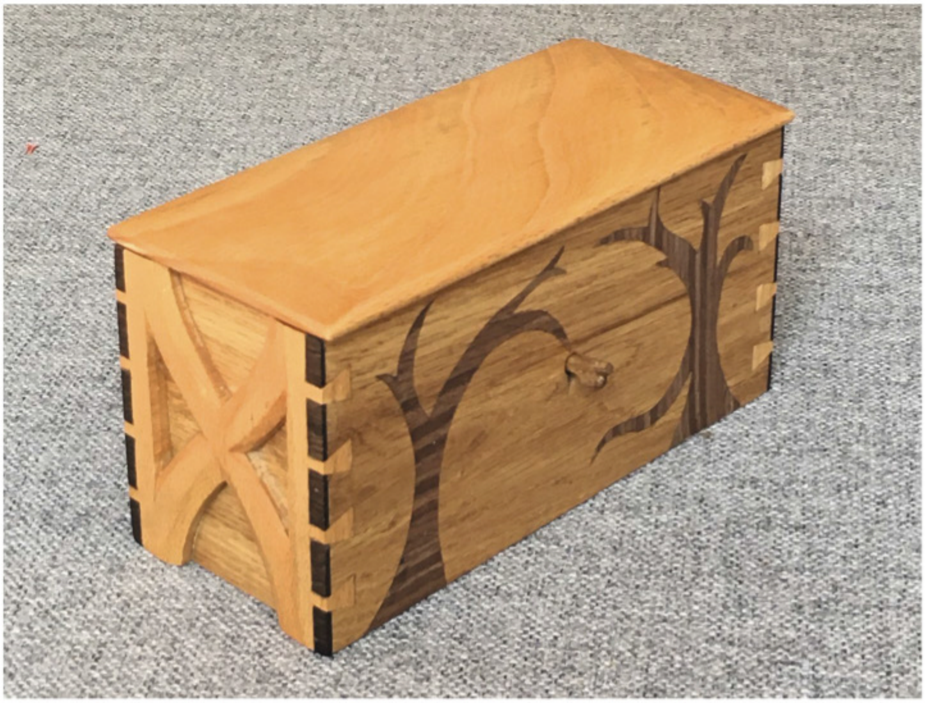


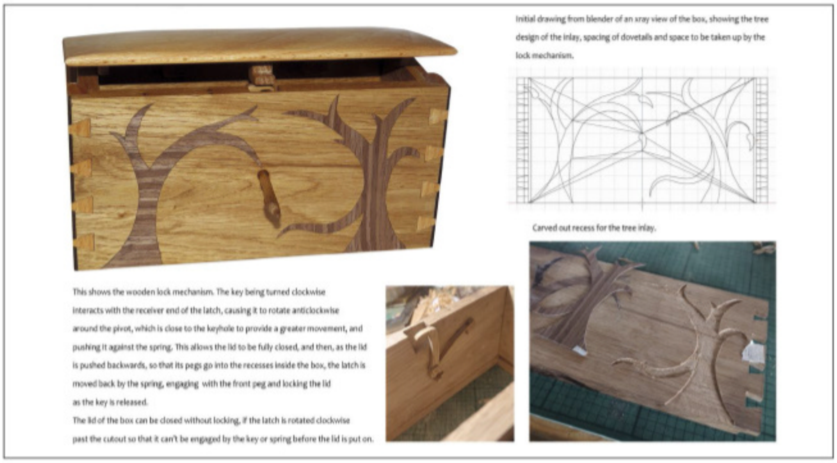
The Winner is.. Toby Watson

The prize goes to an Englishman with ambitions to become a professional woodworker and a plan of what to do next

Medieval revivalism, with a touch of Arts & Crafts, is how the judges saw Toby Watson's clever box to have been inspired. It has some excellent details, with well-matched materials, and has been well finished. The proportions are good and the locking mechanism is fun and innovative. That a fine furniture-making judge can say nothing more negative than that the dovetails are a bit crude is a measure of Toby's work. One might mention that though the fit for the plane is excellent, the lock doesn't always work well, in fact it is sometimes tricky to open the lid.

Toby's solution is that you don't have to lock the lid in the first place. "The lid can be closed without locking," he says in his presentation, which itself is superb, hinting that he will do well when he starts taking his degree in furniture design at Rycotewood College in Oxford this Autumn, when he will have a new Lie-Nielsen LN102 Block Plane Prize, personally engraved by Jenny Bower.



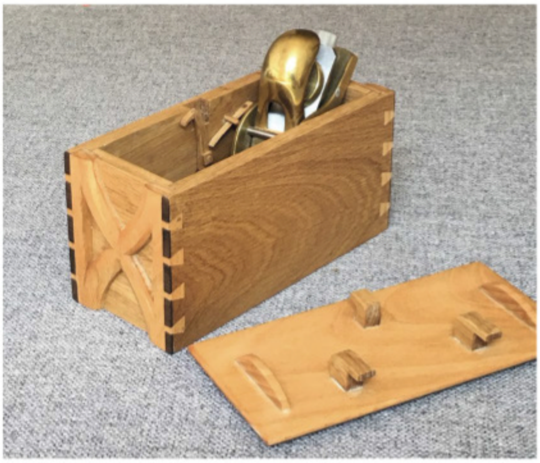


Initial drawing from blender of an xray view of the box, showing the tree design of the inlay, spacing of dovetails and space to be taken up by the lock mechanism.

Carved out recess for the tree inlay.

This shows the wooden lock mechanism. The key being turned clockwise interacts with the receiver end of the latch, causing it to rotate anticlockwise around the pivot, which is close to the keyhole to provide a greater movement, and pushing it against the spring. This allows the lid to be fully closed, and then, as the lid is pushed backwards, so that its pegs go into the recesses inside the box, the latch is moved back by the spring, engaging with the front peg and locking the lid as the key is released.

The lid of the box can be closed without locking, if the latch is rotated clockwise past the cutout so that it can't be engaged by the key or spring before the lid is put on.



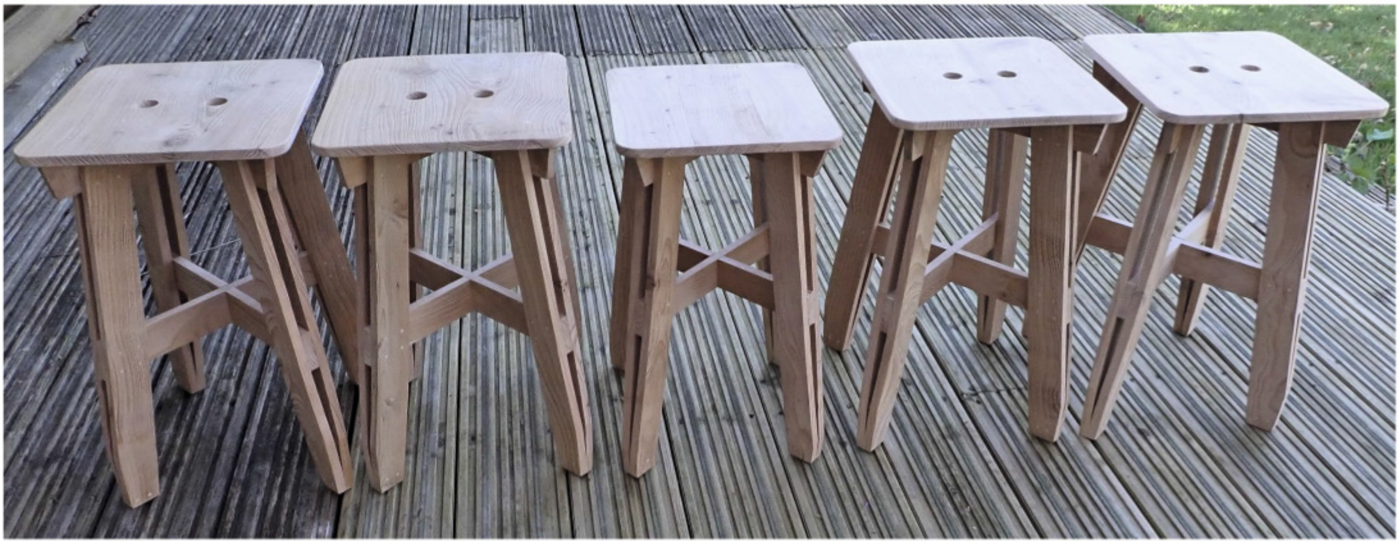
Next Issue

As his final project for A Levels, Toby Watson designed and made a folding chair (below right), inspired by Tom Raffield's remarkable bent wood designs (right). So next issue in QM20 we will be studying how Toby came to design the chair and what the rest of us can learn, especially since the chair was made on his kitchen table.

Toby at the kitchen table on which he made his entry box

Back in Japan

Inspired by a back issue, *Henrie Van Rooij* takes on designs from an original Japanese book



The finished stools are an adaptation of those shown in the original version of *Simple Japanese Furniture* (below). The smaller stool in the centre came first. Jury is still out on those grab holes

アイディアを生かした
家庭の工作
KAK DESIGN GROUP
Making Use of Ingenious Ideas: Woodworking at
published by Ondorisha, 1953

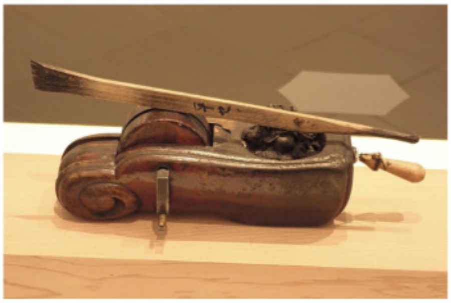
SIMPLE JAPANESE FURNITURE
SIMPLE
JAPANESE
FURNITURE
24 MID-CENTURY PROJECTS FOR YOUR HOME

It might start to look otherwise, but I don't usually depend on *Quercus* to find something to do. Honest! However, when I read the article in QM15 about the book on *Simple Japanese Furniture* building, based on the 1953 book by the KAK design company, I was intrigued. Instantly, the picture of that little stool with pinched legs caught my eye. Oh, I would really love to make that! As it was not long till Christmas, it helped my wife to know which book I wanted most. And then to my delight it was under the tree when presents arrived.

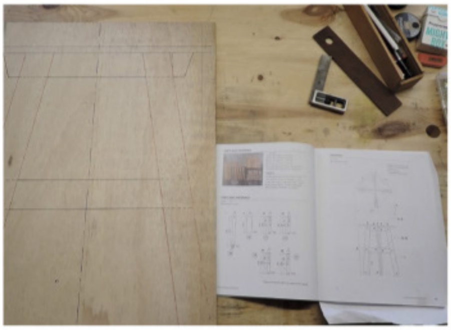
It took until March before there was enough space and time to start making these stools. As luck would have it, I had some western red cedar (*Thuja plicata*) boards stored away some years ago. They were already thicknessed to 13mm, suitable for many of the designs in the book. I considered this red cedar to be an acceptable alternative to the Japanese cedar (*Cryptomeria japonica*) used in the book, which also mentions larch (*Larix*) or tulipwood (*Liriodendron tulipifera*) as they are close-grained and don't have many knots to weaken a board considerably.

I had already visited that nice exhibition on the woodwork of the Hida region at Japan House in London, and now I found myself inspired by the spirit of Japanese woodworking. I dug out that Japanese ink line (*sumitsubo*), which I have had lying around for years. And just as I never got on with the actual thing when I got it first years ago, I found that I still did not get on with it. The idea was one thing, reality another, as it is so often in life. I spent a frustrated hour to try and take it apart, to clean out those old ink crusts. Dismantling this modern plastic version of an ancient and venerated tool, only resulted in broken bits in such a way that the bin was the only appropriate destination for it. There is not even a picture of the tool in action. I just never managed to get any nice clear straight lines with the tool. Well, I never had the correct training! The classic wooden version of this tool, as spotted at Japan House, does look very nice though.

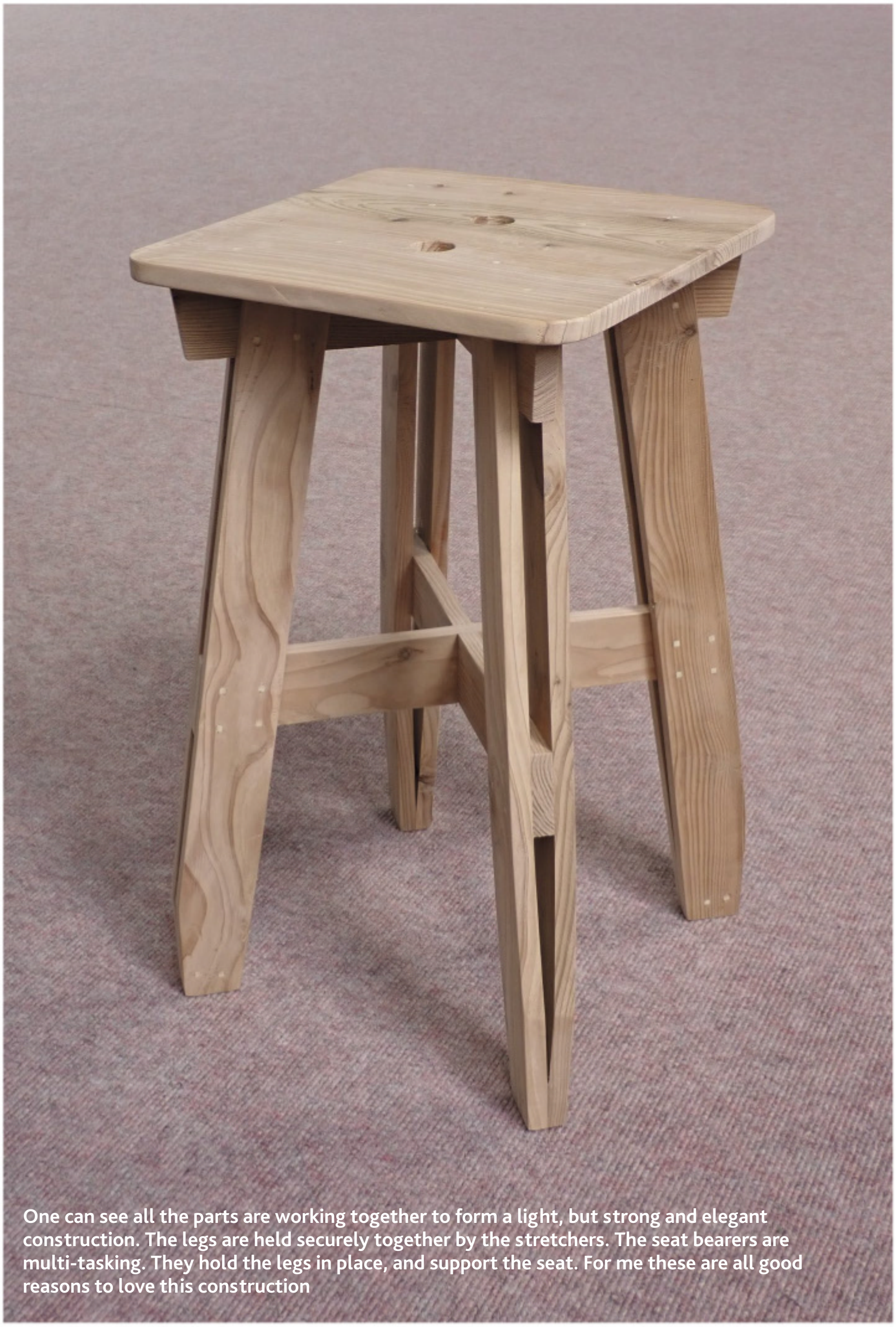
I also experimented with a Japanese marking-out tool, the *sumishani*, which is a kind of 'pen', easily made from a wide piece of bamboo. This was fun for a while, but that black ink got everywhere in the end. Then I remembered that even Dylan Iwakuni, in several of his lovely and interesting articles in QM, is seen to be using a fine Sharpie pen to mark out his high-quality Japanese joinery. That got me off the hook, in a way. It is fun and interesting to explore exotic ways of doing things, but it should also be fine



The classic wooden version (above) of the Japanese ink line, or *sumitsubo*, as spotted at the excellent exhibition in Japan House recently. It works very much like a chalk line, but with ink. It is used to snap longer, straight lines on timber. Henrie experimented with a Japanese marking-out tool, the *sumishani* (below), easily made from a wide piece of bamboo



Difficulties with the drawings and measurements in the original book were easily overcome by making a full-size drawing based on the sizes given in the book (above)



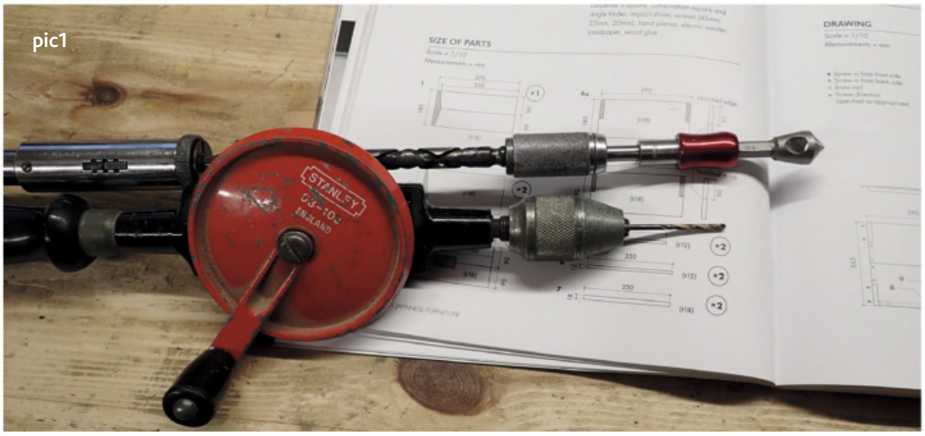
One can see all the parts are working together to form a light, but strong and elegant construction. The legs are held securely together by the stretchers. The seat bearers are multi-tasking. They hold the legs in place, and support the seat. For me these are all good reasons to love this construction

to return to comfortable methods. I am slowly learning that there is a difference between admiring woodworking methods from another culture and using them. I forgot that my familiarity with Western tools is based on years of practice. The same familiarity with Japanese techniques would also need years to build up. The real importance lies in the satisfaction of creating something. And a feeling of kinship and admiration for makers of any culture is a pleasant bonus.

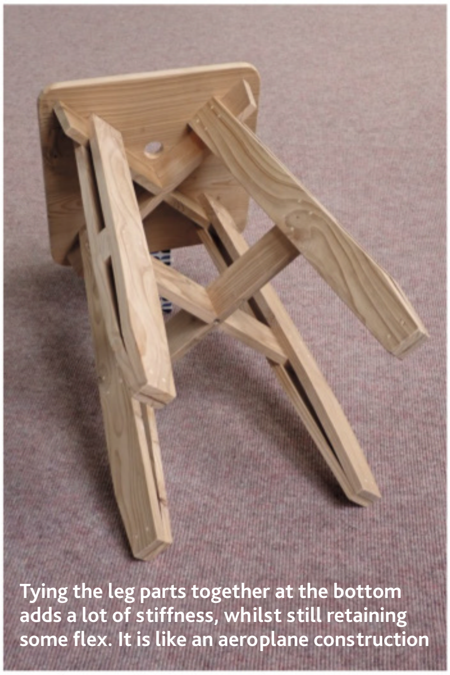
Preparation

In the same vein, to prepare enough material for the first stool, I spent quite a bit of time marking, rip sawing, and edge planing. But when it dawned on me that there are a lot of narrow parts in each stool, that did start to feel rather laborious after a while. Often this cedar grain runs quite contrary, and it becomes onerous if there is a lot of it. These designs originally called for a cheap, off the shelf, standard format of prepared timber. From then onward I prepared all the timber using machinery. I straightened the edges on the jointer, and then ripped the parts to width on our old and venerable 300mm Startrite tablesaw. This might sound like I'm not adhering to the spirit of this magazine, but no fear, there were plenty more interesting things left for my hands to do. Not everyone will have such machining possibilities; but after searching for a short time, I found suitable timber sizes in B&Q.

The book, meanwhile, describes itself as containing drawings for all the 24 projects it portrays. This is indeed the case. But as I discovered from the first project I undertook that the drawings can be somewhat lacking in accurate information. In the parts and materials drawings, it is confusing whether the given sizes are for the sizes of the blanks or for



A small template (below) helped marking out wooden nail positions. A simple jig with a groove (right) to hold the 4mm square bamboo sticks is handy when cutting those nails to length. A countersink bit worked surprisingly well mounted in a Yankee screwdriver (above). Normally it lives in the eggbeater drill



Tying the leg parts together at the bottom adds a lot of stiffness, whilst still retaining some flex. It is like an aeroplane construction

the actual parts. Maybe there is a real cultural difference too in the way technical drawings are done, or the designers of the book did not have full understanding of what a maker would need from a drawing. Where angled cuts were indicated, no angles were given.

These difficulties were relatively easily overcome by making a full-size drawing based on an interpretation of the sizes given in the book. I often do such a drawing on a piece of plywood, which doesn't roll itself up all the time. After that it was easy to take the angles from the drawing to the wood using a sliding bevel. There is a website for mainly Japanese woodworkers, offering courses to learn how to make some of the products described in the book (sugi-diy.com). Scrolling down the menu you come to a post called: 'Apology and correction of publication information'. There you can download a pdf with corrected drawings and measurements for some of the projects. But even then, I found it better to use my full-size drawing before cutting any wood. It could be argued this is a shortcoming, but then you will find that the full-size drawing becomes very helpful later, when assembling all the parts.

The full-size drawing also enabled me to make up some handy templates for all the parts. They are helpful for setting up the mitresaw and its length stop. They are also useful to check quickly if a board has enough usable length available between bad knots to make another part. Oh, and I made a small template which helped with marking out wooden nail positions.

Practice Run & Nails

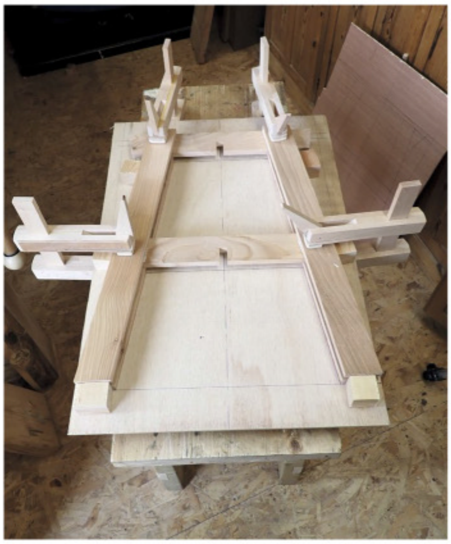
I regarded making the first stool as practice. That took a long time, what with faffing around with ink lines, rip sawing, etc... In the book all the parts are assembled using just screws. I considered that it could not be very strong to use single, quite short screws to take the high stress loads on some of the joints. Also, the design is too elegant to be showing those uncouth screw heads in so many places. I remembered that in Japanese woodworking there is a long tradition to use wooden nails for holding things together. This led to some experimentation using bamboo 'nails' instead of those screws. To make sure the joints would be strong enough I used both PVA woodglue and bamboo nails. When this first stool was complete, I gave it to a nearby weaving workshop. It has been in daily use for several weeks, and it is holding together perfectly so far.

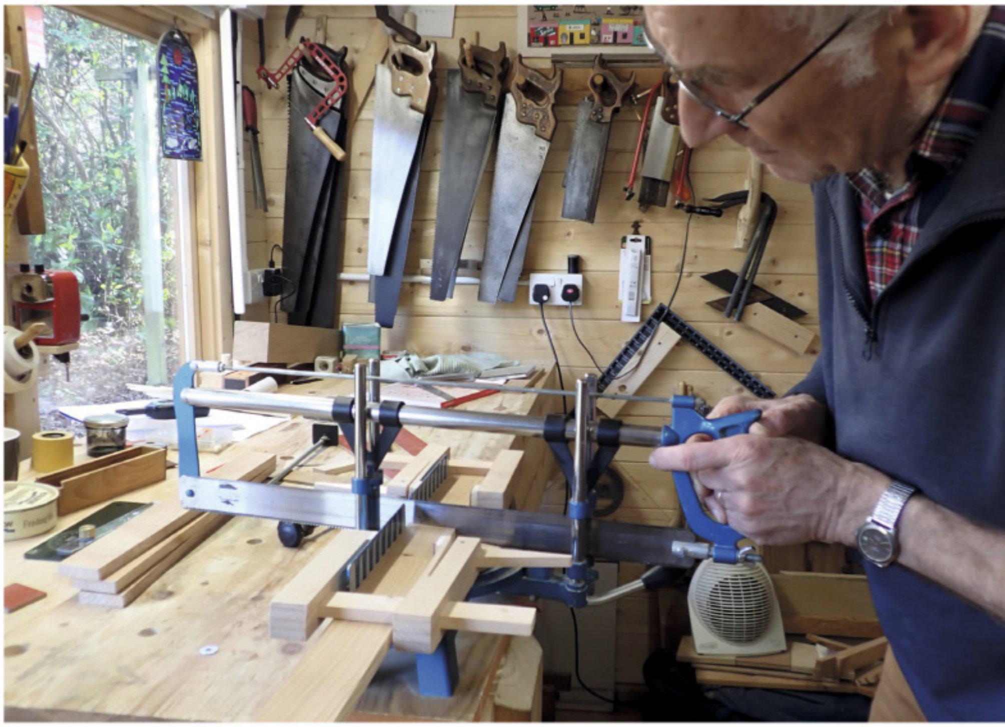
A simple jig with a groove to hold a 4mm square bamboo stick is handy when cutting those nails to length. I got five nails out of each stick. Four turns with my trusty pencil sharpener, (less than £10.00 from Rymans stationers) makes the nails pointy enough to enter the pre-drilled holes. It takes a while to prepare all those nails, but your favourite radio station and a mug of coffee should see you through.

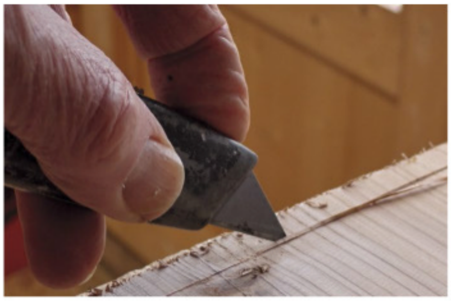
I found myself taking some liberties with the design. The illustrations show that the cross bearers underneath the seat only extend as far as the legs. This offers very little support for the corners of this thin wood. I extended those cross bearers a bit, so that the seat corners are better supported. The original KAK design team might have agreed with this, I hope. I never like to follow any design blindly. If I can make discreet structural improvements without altering the design concept, then that must be a good idea.

The next step might be slightly controversial, but that is not the intention. If you study the project drawings in the book, you can conclude that all these designs are aimed at being used by the average Japanese person. In most Western countries, and many years after war-time food rationing, we tend to be a good bit taller and weightier than the average Japanese person living during the after-war years. That is why I made my stools a little taller, and with slightly wider boards than in the original designs. Boards became 50mm wide, 5mm up from the original 45mm. The leg parts became 500mm long, instead of the original 470mm. The seat, originally made up of three 90mm wide boards, totalling 270mm square, became a one-piece 290mm square. Small changes, but very noticeable when the two versions stand next to each other.

Making good use of the templates, cutting all the parts on the mitresaw was







Henrie glued some small blocks to the outside of the leg positions (above left) on his full-size drawing. This helped immensely with accurate positioning of leg splay. In this way the first pair of legs can be assembled and glued with both stretcher and seat bearer. The second pair of legs can be assembled and glued using either the seat bearer or the stretcher (right), but not both, because you cannot slide all four legs together. Cutting all the parts on the mitresaw was surprisingly efficient. It was handy that the angle setting never had to be changed (above). As learned from the Tage Frid books, crosscutting goes much better if you first create knife wall with your marking knife (left), and then remove a thin sliver of wood from the waste side. The saw will then happily follow the prepared groove

surprisingly efficient. It was very handy that I never needed to change the angle setting. Soon I had bundles of accurate and uniform parts, sufficient for four stools.

Initially the mitresaw blade was very dull. I found that with a small triangular diamond file, from a very cheap set, it was possible to refresh the hardpoint teeth. Just a few strokes as if sharpening a ripsaw gives a much-improved performance. Who says you cannot sharpen hardpoint saws? But alas, this poor-quality little diamond file had just about had it by the end of its first and last real job.

Cutting out the half lap joints for the cross bearers and stretchers could be done with the mitresaw, in sets of four. Just make double sure that you end up with pairs of a bottom part and a top part.

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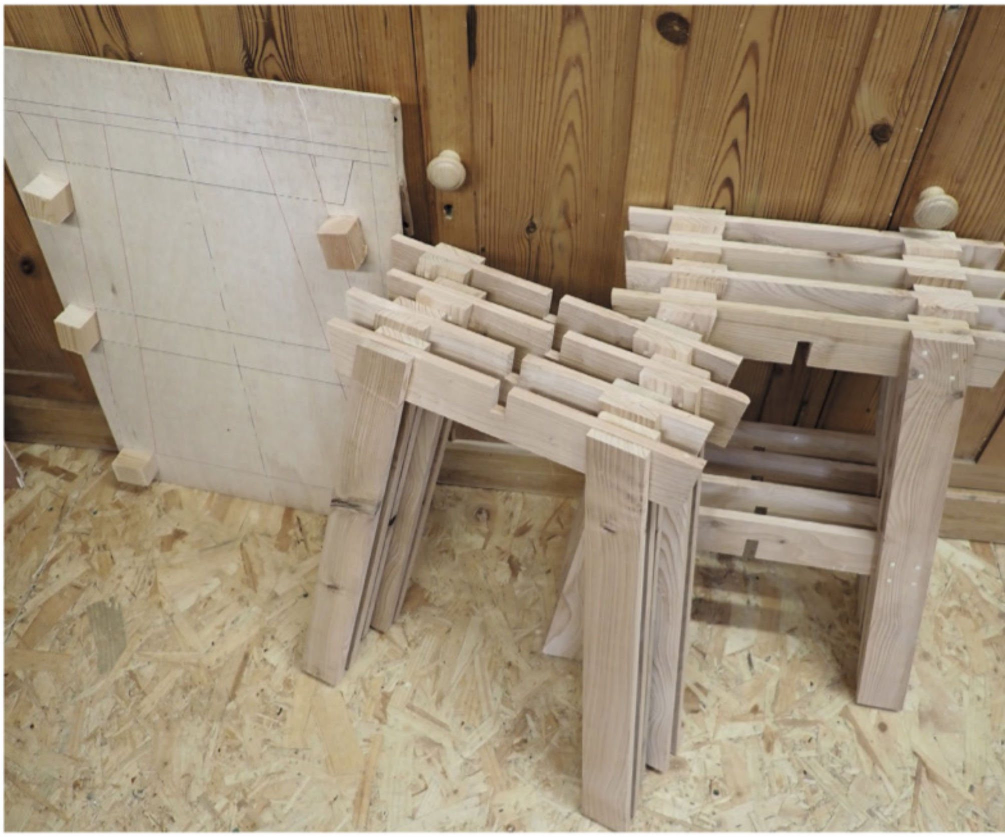
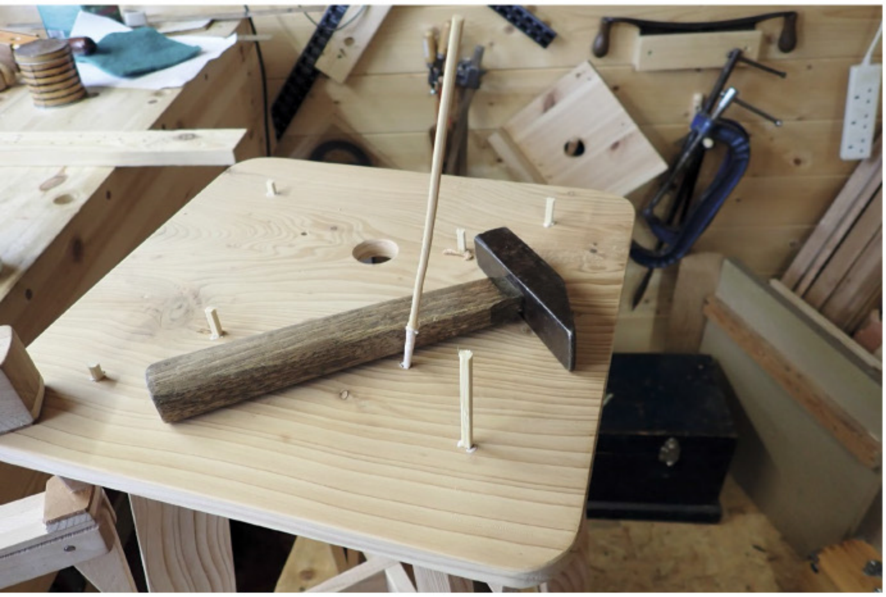
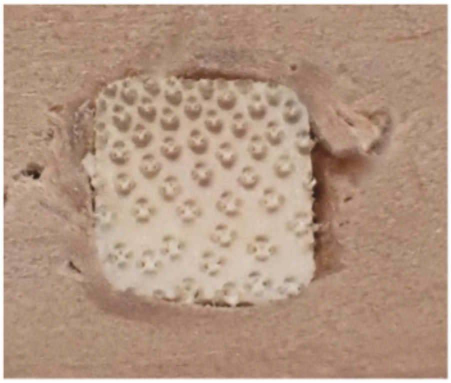
As such there should be nothing wrong with the assembly method described in the book. I just think that with my method you





A vintage German fine saw (right) with an offset blade, does an excellent job of trimming back those stubs. Hold the seat tightly clamped down (above) when inserting nails to avoid a gap between the bearers and the seat. A square peg in a round hole (right). The wood fibres are visibly distorted by the corners of the bamboo nail, but there is no splitting, just a very tight fit. And there is still space for some glue to help keep all the parts together



can be more confident that the leg frames have accurate and symmetric angles.

Once the glue has dried, the small template for the wooden nails can be used to mark out the positions for the bits of bamboo. And look, about those bamboo nails, it was just something I fancied doing. If you want to use screws, that is fine too, probably, but I would still recommend using glue as well to help spread the loads, so that these are not just concentrated on the very narrow screw surface.

After some experimentation I found that I obtained the cleanest pilot holes using a new 4.5mm high speed drill bit and a cordless drill. This worked well with these 4mm square bamboo nails. Supporting the exit while drilling will help prevent breakout. I decided on a square section for the nails, because I reasoned that it would give a good balance of mechanical tightness in the pilot holes and leaving space for glue. Like this you can tap the nails in place without them binding much.

Use a thin bamboo skewer to poke some glue into the holes, before tapping the nails in, leaving the ends protruding front and back. When the glue has dried you can trim the stubs back with your favourite side-trim saw. A sharp chisel was used to pare the nails flush with the surface. I found that the chisel became blunt after a surprisingly short time. Apparently, bamboo has one of the highest silica contents of the plant realm. Maybe that is the reason why it is so tough.

When the leg assemblies have been slid together, I put a screw through the centre of the lower crosspieces, to help with frame stability. Then the ends of the legs can be joined. With the two sides held together with a clamp, a ripsaw can be used to create matching flats between the leg ends. I gave it two cuts, to create a good surface for the glue. When the leg ends are thus joined, they can be strengthened with two bamboo nails. Only then did I mark out and sawed the small vertical cut to create an elegant taper to the leg ends.

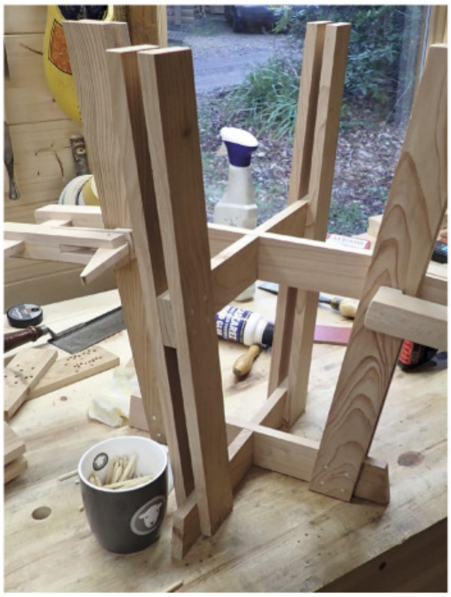
By the way, for all the clamping tasks, I used some newly-made luthiers clamps. These were heavily inspired by Steve Maskery's (of *Workshop Essentials* fame) examples. They work a treat and are simple to make out of almost any hard offcuts. And there is no need for any special materials, metal bars or anything. Maybe not essential, but the availability of a planer/thicknesser and a bandsaw can be very handy in this case. Thank you very much, Steve (stevemaskery.com).

Final Steps

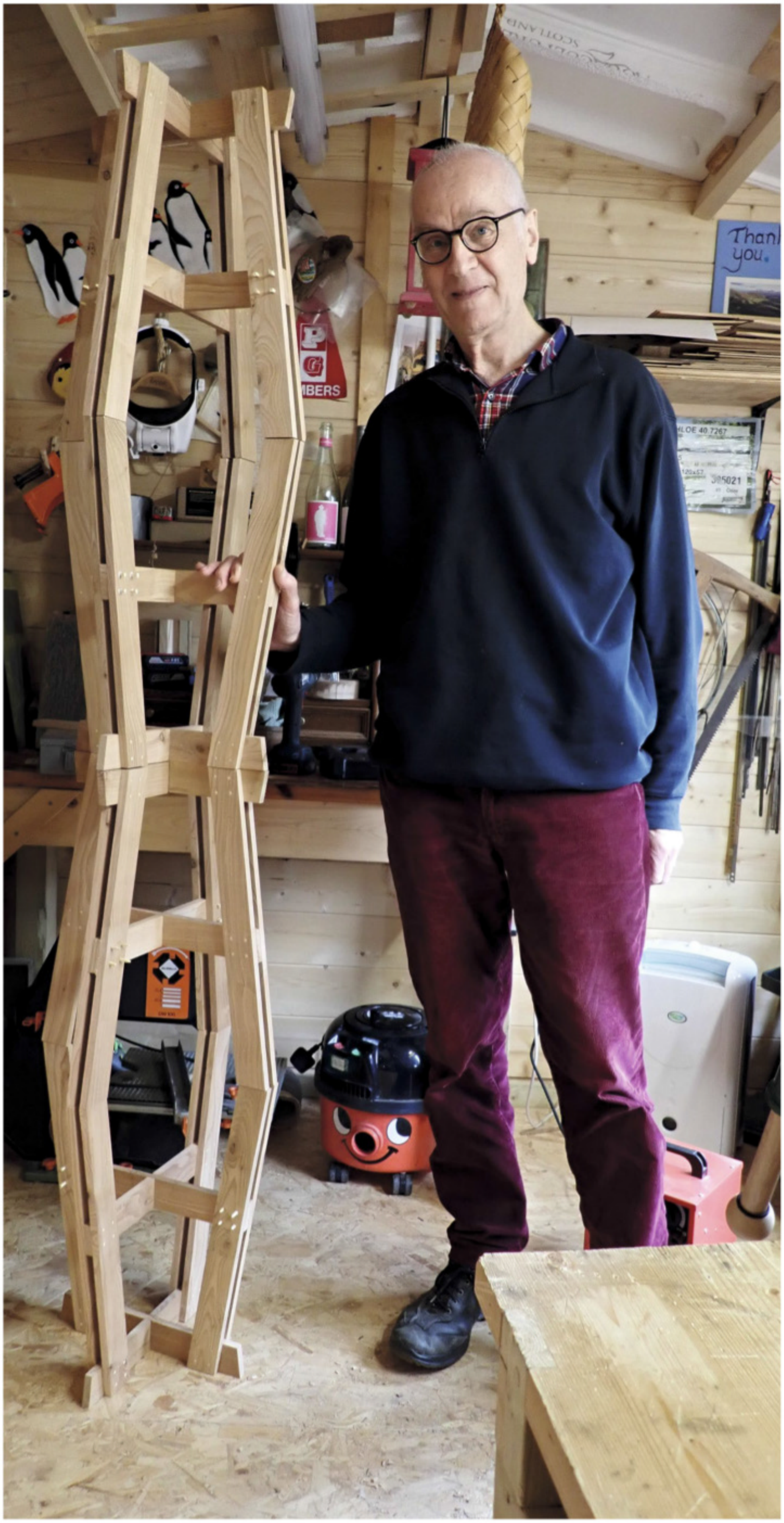
Now approaching the conclusion of this Japanese adventure, though the seats still needed to be done. I was concerned that using three separate boards, as the drawings indicate, would lack integrity. Because the cross-bearers run diagonally, the centre board would have little support when taking on a load. One would be tempted to glue them up into one panel. I was fortunate to have a board that could give me a one-piece seat 290mm square. This would negate these stability worries altogether. This board was a bit rough and knotty, the result of previous surface breakout from slightly worn planer blades chewing through difficult and changing grain directions. That is when a cabinet scraper, or card scraper on the other side of the Pond, is just the thing to help make the surface acceptable.

Use any small round container to mark out the corners, before working them round. This can be done in many different ways. But for purely sentimental reasons I used the small three-wheel bandsaw which I inherited from a dear old friend a year or so ago.

When you are happy with the looks and finish of the seat it can be fixed to the base. I found it best to centre the leg assembly upside down on the upturned seat panel. Carefully mark out the bearer positions to the underside of the seat, and leave an indication of which corner belongs to which leg, in case your leg frame is not perfectly square. Then it is simple to make use of these markings to drill the 4.5mm holes which will take the bamboo nails into the bearers. I measured these positions at 60mm and 120mm from the seat corners. Then, with the whole stool now upright, replace the seat in the exact position from before, and clamp it to the bearers. When



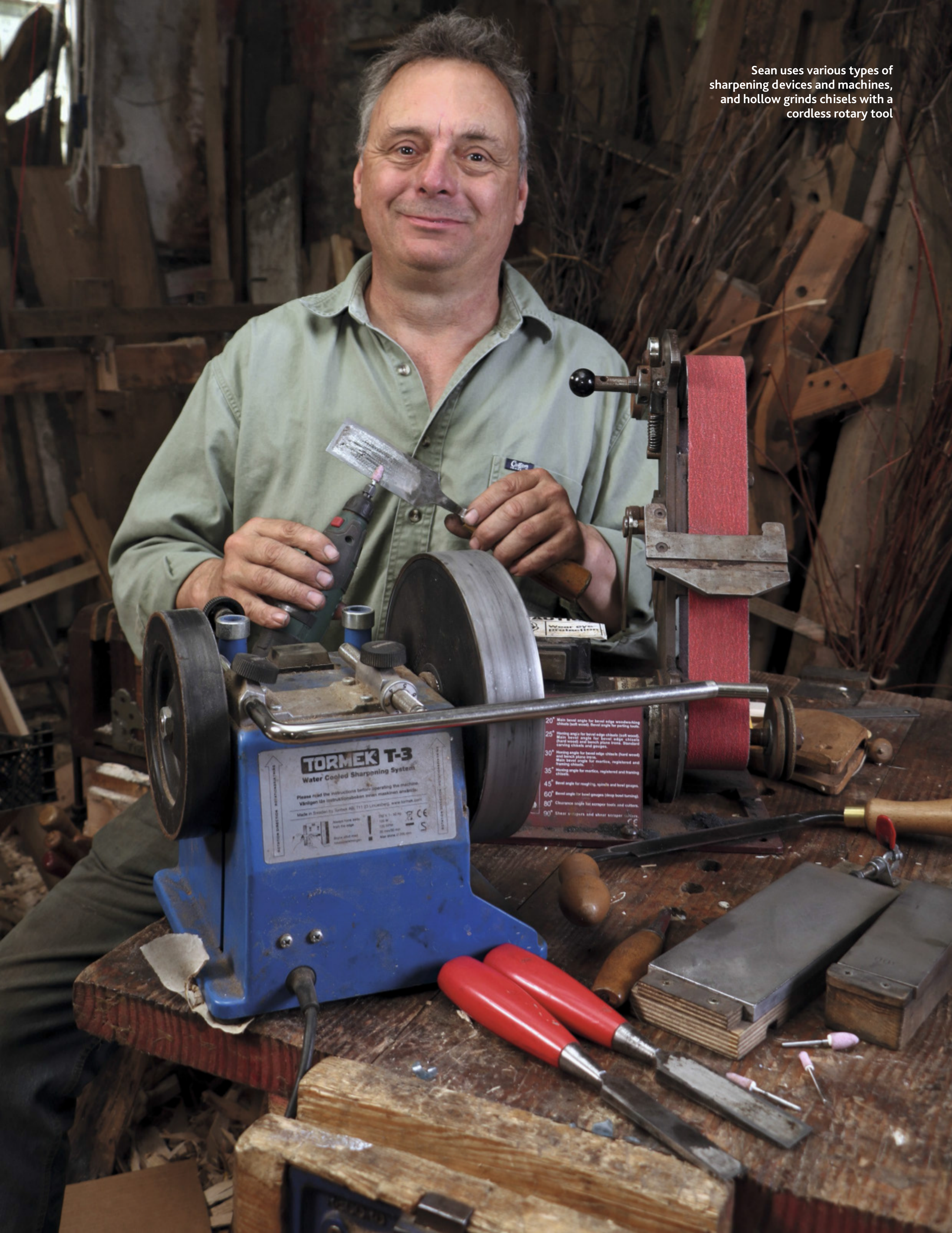
The second stretcher being glued in place (above). While assembling, be very aware of which way all the notches are pointing. You can have some serious trouble otherwise. The tower (right) starts to look like one of Brancusi's 'Infinity Columns'



you now drill from the top through those holes drilled earlier, you can be confident that your drill bit will not miss those bearers. Keep the seat closely clamped down when the bamboo nails are tapped in, so that there is no gap between bearers and seat. On the first stool, these gaps closed with a loud crack when I sat on the stool for the first time, and I had to re-trim the tops of those nails suddenly sticking out of the surface.

One more liberty which I took, was to create two 25mm grab holes in the seat. This makes one-handed picking-up much more comfortable. Centres are 40mm away from the centre of the seat. Much closer, and there will be a conflict with the cross bearers underneath. A general tidy-up with sandpaper, and softening of any sharp edges, completes the stool. Once I had finished, my wife told me that she prefers the version without finger holes. Doh!

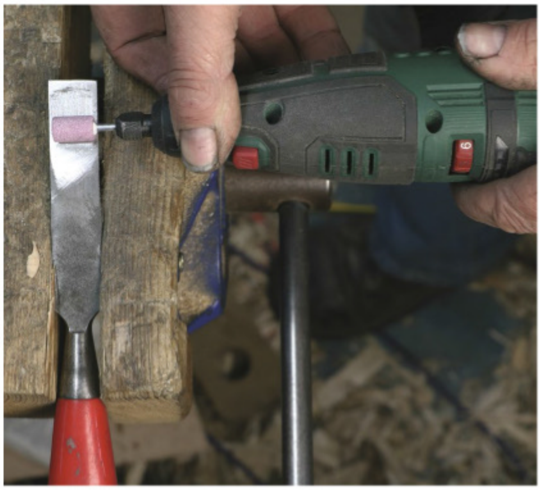
And there we are, with some nice elegant looking stools to rest on. But the rewards go beyond mere sitting. It was nice to discover a new style of construction. I had to use my reasoning to overcome the problems as I perceived them. Also, it is possible to adapt a design, and not lose the essence of it. I hope to come back to these stools in future and maybe introduce more variations in size but also colour. One could argue that this Japanese design book is not quite perfect. But then some of the designs are very enticing. And any maker knows that the effort of making a design really your own can be so rewarding. I am glad I came across that book.

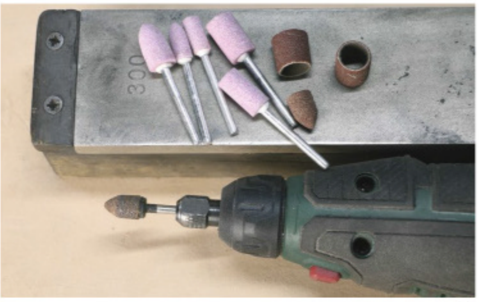

Sean uses various types of sharpening devices and machines, and hollow grinds chisels with a cordless rotary tool

TORMEK T-3
Water Cooled Sharpening System

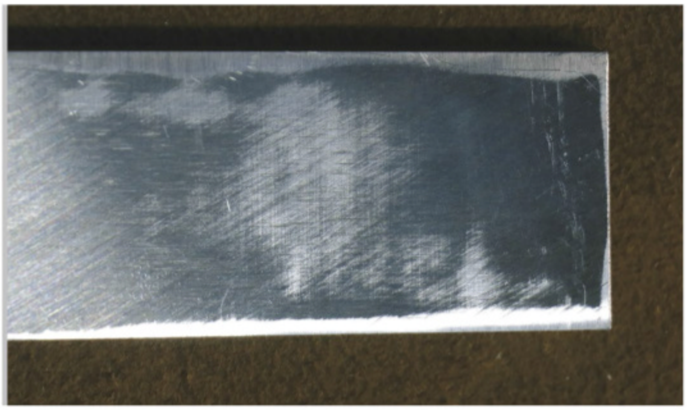
Hollow Ways

Sean Hellman **hollow grinds chisel backs for faster, better sharpening**





A chisel ground on a belt grinder (below, Pic.1). The darker areas have been flattened on a 120 grit diamond stone, the bright areas are rounded-over. Bonded abrasives and sanding drums with a small cordless rotary tool (Pic.2, above). Holding the rotary tool (left, Pic.3) with two hands while hollow grinding the back of the chisel



Many woodworkers have a collection of flat chisels, some perhaps bought in the hope of renovating them to their former glory, some that might have been used to open paint cans or those that are just rusty and long neglected. Hollow grinding, then, is exactly what needs to be carried out in order to restore or bring them back to function.

To clarify; the terminology as to which side of the chisel is which: the bevelled side is the face and the flat side is the back. The back of a chisel should be absolutely flat and finer cabinetry-work chisels should be the most perfect flat of all. There is debate in sharpening circles, as to how flat the back should be. For me it's about having tools that work well for the job in hand, but the finer the job to be carried out, then the flatter the back must be.

You can have a long back-bevel on flat chisels. Whether this is through wear or is made to save time, rather than sharpening the entire length of the chisel, this is OK if you're happy with that. We get used to our own tools and any idiosyncrasies they may have, but it is when we use other people tools, or let others borrow ours, that we or they can claim that a tool does not work properly.

Some of the chisels I own have been used satisfactorily by me and their previous owners for many years, before flattening them. But, if rust pitting or other damage is present, or if the chisel has been poorly manufactured, then flattening by means of abrasion can take so long that you will die of boredom, or repetitive strain injury.

An out of flat or a long bevel also effects the type of work to be undertaken. For example, in general carpentry, rather than fine cabinet-making, you can get away with long back bevels and less than flat chisels. In use, the chisel needs to be tilted so that a vertical or horizontal cut can be made, and this can impair accuracy of the cut.

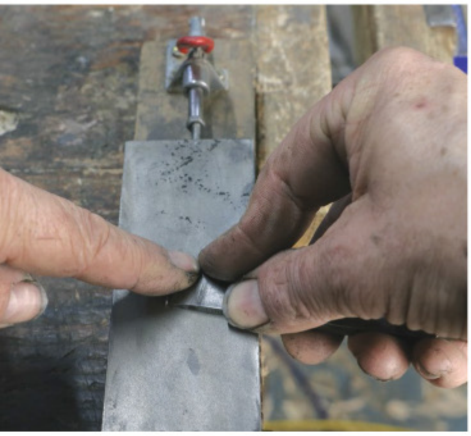
Precision is important when making dovetails and other tight-fitting joints used in cabinets, chairs or tables. The long flat paring chisel must sit flat on the wood in order to take a shaving, rather than using a chisel that is not flat, where lifting the handle slightly gives rise to the possibility of it diving into the wood.

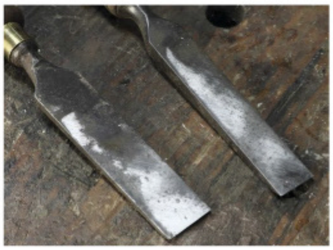
Maintenance

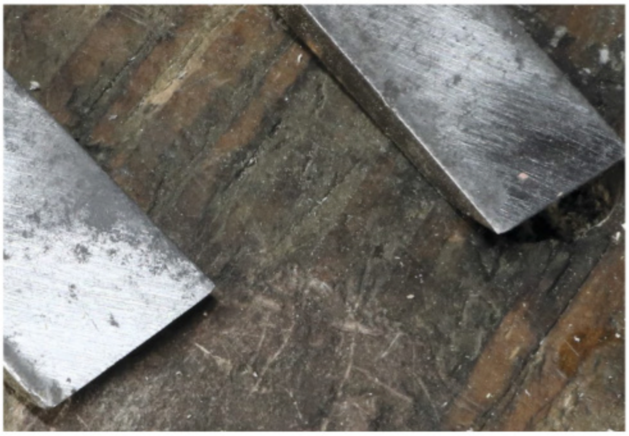
Hollow grinding aside, in everyday maintenance, the bevel and the back of any chisel must be honed and polished on an abrasive. Any burr or wire edge must be removed; and if the back of a chisel is not flat then it will have to be lifted up at the handle by a small amount. This can create a micro bevel at the back edge of the chisel. Over time, this easily becomes more pronounced, affecting the function of the tool.

At this point, hollow grinding the back of the tool, is useful. Without hollow grinding, flattening the back of a narrow chisel can be relatively quick and simple, but anything over half an inch in width will take longer. Wider 1.5in or 2in chisels seem to take forever on bench stones, even 120 grit diamond stones. It is inadvisable to sharpen them on a belt grinder, as this will round over the sides of the tool (Pic.1).

For those who insist on trying: if the chisel is positioned on the belt grinder so that the belt is moving parallel with the sides of the chisel, and over the cutting edge, it is less likely to round the back. Only grind with the belt moving from the handle end, and towards the edge. Never grind into the edge as this will round over or 'convex' the edge you want flat. I rarely use a belt grinder when resharpening or renovating tools. Using the side of a diamond wheel on a Tormek wet grinder can be used instead of a belt grinder, with similar cautions; make sure that you keep moving







Holding the chisel with both hands near the cutting edge for accurate flattening (Pic.4, left). Bright areas on both chisels (Pic.5 above) are scratch marks from 120 grit diamond stone. Close-up of chisels (Pic.6, right)

the chisel so as to abrade the whole back, rather than holding it in one fixed position.

Hollow Grind a Chisel

Hollow grinding removes metal from the back of a chisel, making flattening it less arduous. It also hastens the removal of any rust pitting on the edge.

I have been using a hand-held rotary tool for years now, to hollow grind bevels. I recommend this for chisels. The results may not be as uniform or perfect as a specialist grinding machine, nor an engineer's milling machine, but are more than good enough for sharpening quickly and efficiently.

The rotary tool, die-grinder or Dremel is a simple tool that holds a bit with a collet. Some of them have a chuck in order to take varying diameter bits, so make sure you have the correct size bit for your tool. You could also use a small corded or battery drill, but these are heavier and more difficult to manoeuvre accurately. The abrasives I use are bonded grit on a 3.2mm diameter shank that is cylindrical in shape. A 15x8mm diameter is ideal. Some brands wear quicker than others, but all can be reshaped on a coarse diamond stone (Pic.2).

It is possible to use diamond abrasives in the rotary tool. Just run them slowly as the heat they generate in use will react with the iron and your diamond will evaporate. Small sanding drums can be used, but they can wear very quickly and need to be replaced often. It is also possible to use tungsten carbide.

Step by Step

First mark the back of the chisel with a marker pen or engineer's blue. This is not essential if you are confident about observing the grinding marks from the rotary tool. Clamp the chisel to a bench or place it securely in a vice.

Grind in the centre of the back, for up to 2-4mm from the sides and edge. Use both hands on the tool for greater control (Pic.3). How far along the back that you hollow is up to you. Start small, and grind again if absolutely necessary.

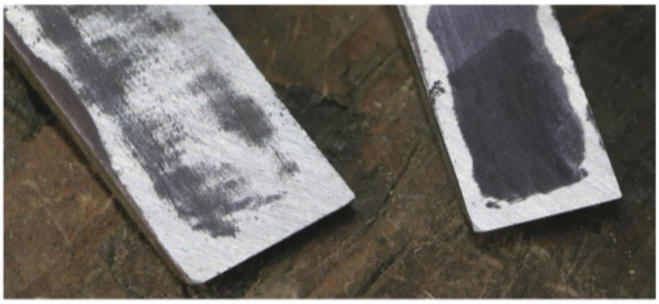
Do make sure that your bench stone is flat. If concaved or dipped in the middle, there is little point in flattening the chisel against it, as it will round over the sides or edge of the chisel. When your tool has been ground, colour the back of it, including the hollow, with a marker pen and then abrade the back on a flat bench stone. This will show where scratch marks abrade, and therefore where more abrasion will need to be carried out.

Using your dominant hand, hold the chisel against the stone. Hold it close to the sharp end, cradled in your fingers with the fingers of your other hand to press down on the face so that it remains perfectly flat, and secure, against the stone. If the chisel is held at the end of the handle, it is easy to lift it up, creating a back bevel. Abrade the back (Pic.4). Then study the back to see if more hollow grinding is needed (Pics.5 & 6). I often find that I need to regrind with the rotary tool a few times, and I try to make the hollow more uniform in shape.

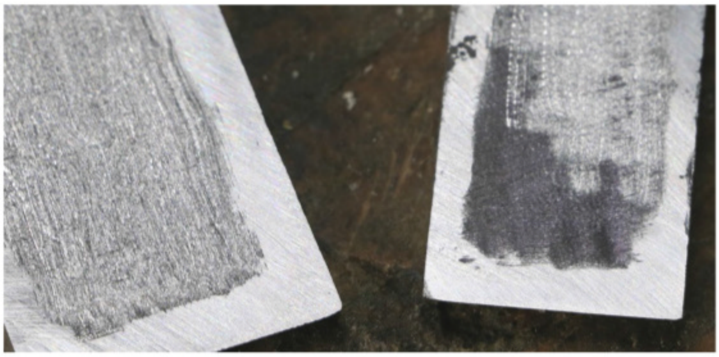
There is no need to keep hollow grinding the back once you have got it flat, and the hollow will disappear over time as the chisel is sharpened.

In reality, it is not necessary to flatten all yours chisels. It depends what you use them for and some out-of-flatness does not matter for most work. We are not engineers working with 0.001in tolerances as in metal. Wood swells and shrinks. Its fibres deform and then spring back into shape after being cut. The right tool varies from person to person, and for different purposes and trades. Hollow grinding chisels is a useful process for saving time and for keeping tools fit for the most demanding jobs

Sean Hellman is author of Sharp*, and runs short courses in his Dartmoor base. Follow @seanhellman or visit seanhellman.com.*



Two chisels first ground with a rotary tool (Fig.7, above). The back has been marked with a marker pen and honed with a flat 120 grit diamond stone. The hollow is shown by darker areas. The larger chisel needs more hollowing and flattening through honing. The smaller one needs more honing as the left-hand corner has no scratch marks



The finished hollowing and flattening on a 120 grit stone (Pic.8, above). They are now ready to be abraded on a 400, 1000 and finer polishing stone, 3000 and/or 6000 grit

Honing a Replica Guide

Intrigued by Lee Valley's new Replica Honing Guide of a Stanley 50, *Nick Gibbs* prototypes an upgrade

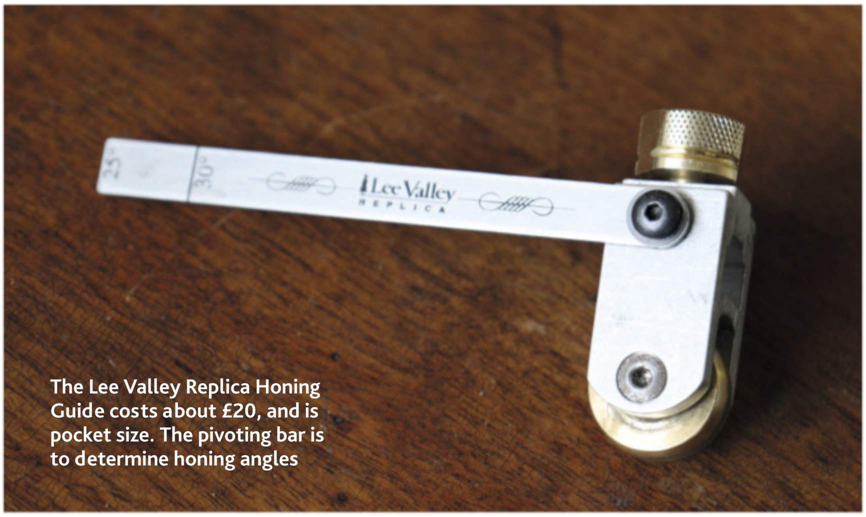
Lee Valley's latest honing guide, a replica of the Stanley 50, is cute and pocket-sized. With such a pedigree in the sharpening market, one hopes the Canadian company's design is as good as the pioneering Mk1 and Mk2, and the recent Short-Blade model we so love. How frustrating then that it wouldn't fit my Clifton 51/2 jack, nor my Stanley 91/2 block plane. The knurled brass nut is too large for the Stanley slot, and too loose for the Clifton because the position for a 30° honing angle puts the nut right over the slot's frontal, access hole. Of course the block plane problem can be resolved by removing the screw every time you hone, but this feels rather too time-consuming.

A friend leant me a blade that takes the honing guide, and together they work well. I like it that you can feel what you're doing. Yet I still harbour hopes there might be some further purpose on my own tools for this pocket-sized wheeler, the rim being bevelled so you can camber an iron with ease. I considered rare earth magnets, then wondered if twisting strips of metal could slip through narrow slots and spread the pressure on wider ones or, like my Clifton, over a wide-diameter access hole for back iron nuts.

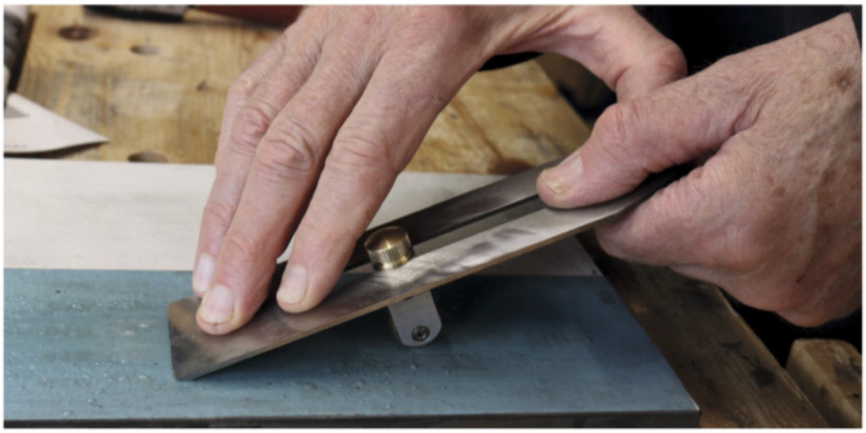
Using plates from magnetic door catches, this has worked well after only a few hours bodging. There are lots of improvements to be made to this prototype; refinements to something new being known as product personification. Oh that David were still with us, and I'd be down to Devon for tea chez Charlesworth to see what he thinks. I'd show him on a stone that this replica is small (and at £20 good value) and is so unobtrusive that you might believe you're honing by eye. And there is potential for it to hold chisels narrower than 12mm if you fit a longer screw or use shims.

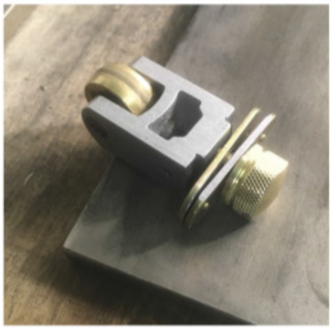
The Lee Valley team has produced a cute replica of a vintage product, with this tiny gadget offering us opportunities to Heath Robinson our own solutions on a single wheel and casting. That's exactly what, Lee Valley has reminded me, chippies of old would have done.

The Lee Valley Replica Honing Guide costs about £20. For details visit leevalley.com.



The Lee Valley Replica Honing Guide costs about £20, and is pocket size. The pivoting bar is to determine honing angles





Using the Lee Valley Replica Honing Guide in use (above). It can also take narrow chisels (right), though you may have to fit a longer fixing bolt. Another upgrade is to add thin metal strips (left) to spread pressure and fit through slots without removing the fixing screw or add a shim

The Measure of Success

From the waistcoat pocket to the moon, *Robin Gates* charts the rise of Stanley's iconic PowerLock

While buying Christmas stocking fillers for our children about 15 years ago we hit on the idea of tape measures. They were dirt-cheap imitations of the Stanley PowerLock bought at a market stall but they kept the kids amused for hours and, notwithstanding that I've dismantled the tapes at least twice to repair the lock mechanism, they're still going strong today. Meanwhile a small mountain of electronic toys must have found their way into landfill. Already the owner of a French-made Stanley 10ft Dynagrip tape, a largely plastic model but likewise still functioning after 20 years of hard knocks, it was taking those cheap tapes apart which piqued my curiosity as to how the tape measure worked and the steps in its development.

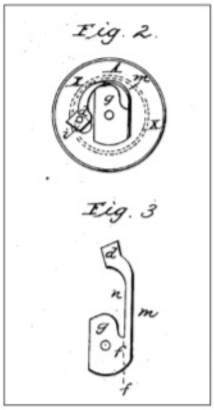
The original Stanley PowerLock is a design classic, a little masterpiece of functionality wrapped up in that instantly recognisable chrome and Life Guard Yellow livery. I find the full-metal case lends a weight of authority to measuring which plastic-bodied tapes lack, and it's backed up by a quality of build and features which, although common today, stood out from the crowd when launched in the 1960s. There's the (slightly alarming) spring-operated rewind, of course, the sliding terminal to ensure an accurate zero, the enhanced legibility of black-on-yellow markings, the 2in base enabling inside measurements, the sturdy belt clip and that distinctive lock button placed perfectly for the thumb, memorably described in Stanley's patent as the 'arcuate brake member... slidably engageable'. Patent attorneys have a language all their own!

The PowerLock, which boasts the distinction of a moon landing with the Apollo 11 lunar module, didn't land in Stanley's catalogue fully-formed. There's a history of struggle and innovation behind it reaching back at least to the mid-19th Century. Documentary proof of this comes from an 1864 patent awarded to William Bang Jnr of Connecticut for his 'Improvement in spring tape-measures' with Bang's inventive step being his 'compound spring-click stock' which did away with the 'old arrangement' of a separate stock, spring, pivot, and click. This invention created something of a local stir among trades people but it was Hiram Augustus Farrand's 1922 patent for a 'measuring tape made of metallic ribbon curved to have a concavo-convex cross section and sufficiently flexible to permit of its being rolled or coiled' which was to have the longest-lasting influence on tape measure design.

Farrand's most popular tape was the Rapid Rule which, to anyone familiar with the way a modern tape has to be pulled out and retracts automatically, will feel positively strange. The coiled blade is only partially enclosed by a circular nickel-plated cup and, before being extended, the zero-end of the blade must be lifted to an angle of 30^{0} so as to peep over the lip of the cup. Notice that the blade is retained in the cup by an axially-mounted cross-piece, the brake-frame, which is actually an M-shaped leaf spring. Now instead of pulling the blade out you squeeze the two ends of the brake-frame which flexes upwards releasing its hold on the cup so that, under the influence of the coiled blade wanting to spring from the cup, the cup starts spinning between your fingers. Meanwhile the blade shoots rapidly outwards (it's a Rapid Rule, after all) and, if you've failed to think this through (as I did on first use), it may launch skywards like a 6ft javelin because here's another thing, the blade isn't attached to the cup.

If you find one of these tricksters without its instruction leaflet I'd warn that the most important thing is not to point the blade towards yourself as there's a real danger of personal injury. To reinstall the blade (if it hasn't disappeared over the neighbour's fence) you push it back in while the brake is off, which is easier than it sounds.

LIFE GUARD YELLOW
12FT.
STANLEY
POWERLOCK
PL12



Stanley's iconic PowerLock in Life Guard Yellow with thumb-operated lock (above) and the patent drawing of William Bang's 1864 tape measure with 'compound spring-click stock' (below)

In its day the Rapid Rule's main competitor was the carpenter's traditional folding boxwood rule. But a century ago almost every worker wore a waistcoat and it was perhaps a clever piece of Farrand's advertising to show himself tucking the 6ft Rapid Rule into a tiny waistcoat pocket. Carpenter or not, here was an impressive little toy to carry in the three-piece suit for amusing your mates.

By contrast, the relatively awkward folding wooden rule had required a dedicated rule pocket in a worker's overalls, and no one would carry one unless it were needed. But unfortunately for Hiram Farrand, and despite notching up some 300,000 satisfied customers, the 1930s depression plunged his company into financial difficulties and it was left to Stanley – who bought the business – to claim the kudos for folding the wooden rule into history.

The story since then shows that the chief asset on Stanley's shopping list had been the rights to Farrand's concavo-convex blade which was at the heart of his invention. Abandoning Farrand's quirky spinning cup design Stanley reverted to a more docile 'pull-push' action for a black-on-white blade in a fully-enclosing chromium-plated case, a paragon of simplicity exemplified by this 10ft model which, in 1964, cost 11s 6d (about £10 today). Understated and solid, it's no larger than necessary to house the blade, as tactile as a vintage timepiece and likewise to be consulted with ease. But then came the PowerLock and the rest, as we might say, are mere feet and inches.

Power in the Pocket

When workers used to wear waistcoats, holding a tape in the pocket was better than a folding rule, which is why Farrand's Rapid Rule was such a success

Like a pocket watch, Farrand's Rapid Rule (above) carries in the waistcoat today as it did all those years ago. Pressure on the Rapid Rule's spring-brake allows the blade to uncoil (left). The concavo-convex blade bends to measure around corners and circumferences (right). A 10ft Stanley pull-push rule from 1964 (below left) and how the tape is now (below right)

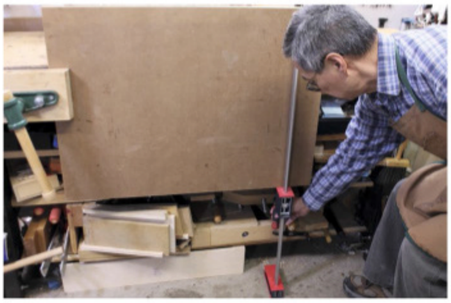
LIFE GUARD YELLOW
12 FT.
STANLEY
POWERLOCK
PL12

Quick & Easy Board Jacks

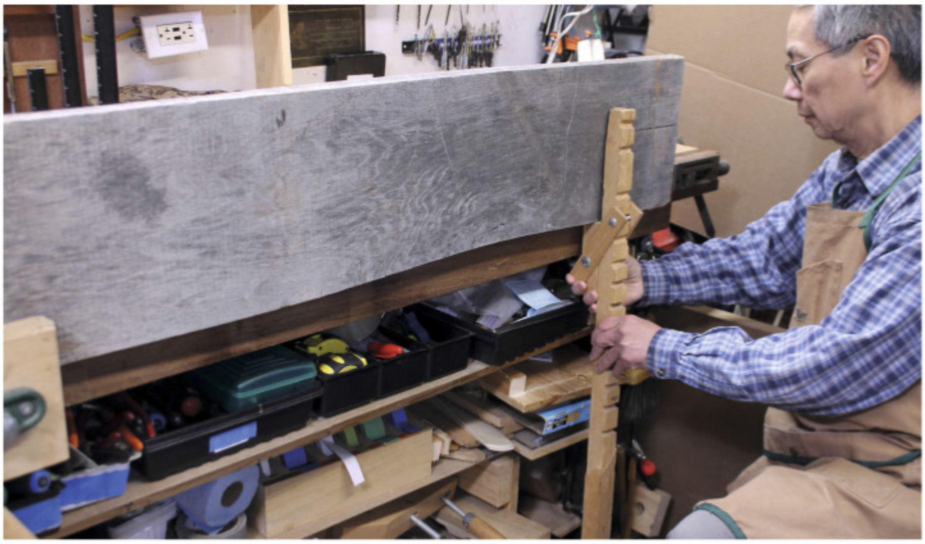
Charles Mak **shares three simple ways of hanging your board or door on the bench**

You can edge joint boards or remove machine marks on a long board by hand on the workbench. Simply clamp one end of the board in the front vice and support the other end with an appropriate shop fixture. One type of the fixture rests on the floor, and I call it a board jack (Pic.1). I call the other type of support that hangs from the bench a bench jack, though you can use the terms interchangeably. Here, I'll cover examples of both types that you can quickly put together. In a previous issue (QM18, Handscrews), I showed how to use a handscrew to hold a narrow board on the workbench top for edge planing. For a wide board, you can hang it on the side of the bench using the front vice and a large handscrew at the rear (Pic.2).

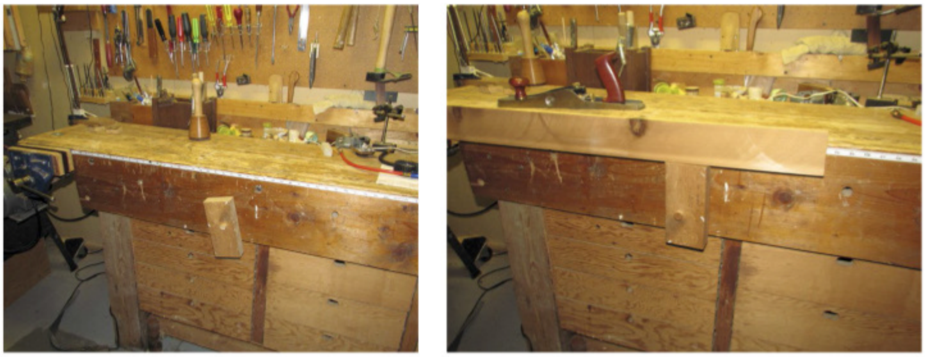
No handscrews? No problem, if you have a few anti-slip parallel jaw cramps. Estonian woodworker Taavi Timberg cleverly made a board jack out of one of those cramps by reversing the movable jaw that stays locked in the vertical position (Pic.3). The usual bench jack has holes on it that allow the dowel to be adjusted for different board widths and working heights. Canadian woodworker and editor Bob Lee recently shared his unique bench jack design with me. His bench support has a dowel glued into an off-centre hole on a 2x4 block (Pic.4). Holes of the same diameter as the dowel are drilled into the workbench's apron at desired locations. To support a board, he inserts the bench jack's dowel into one of the holes on the apron (Pic.5). Unlike the traditional supports like the sliding deadman that would require a laborious modification to the bench , any of the above fixture options can get your long panel or cabinet door hung with minimal effort!



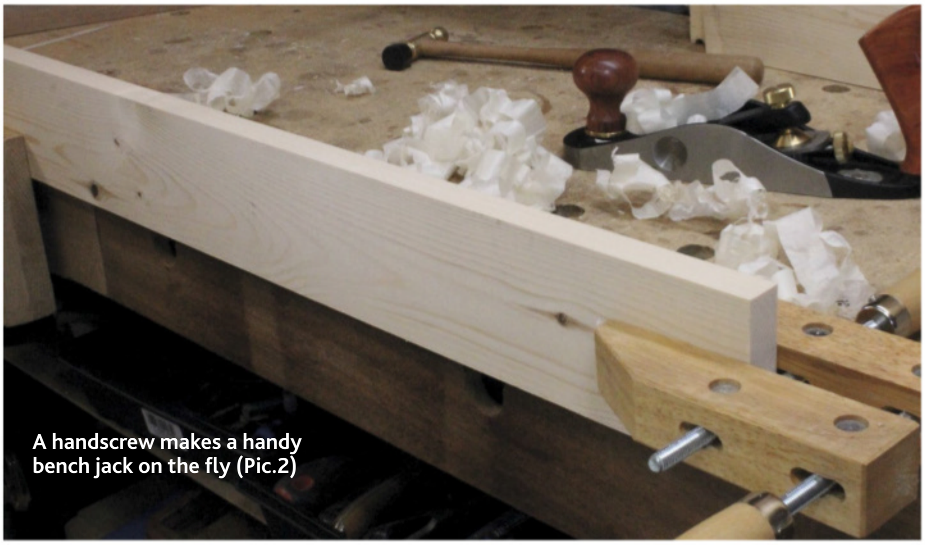
Any parallel cramp with a spreader function can work as a board jack (Pic.3, above)



A board jack (Pic.1, above), aka a bench slave, is used to keep a board from sliding or dropping



You need just a few holes on the apron to work with Bob's bench jack (Pic.4, above left). Rotate the 2x4 block to get to the desired support height for the board (Pic.5, above right)



A handscrew makes a handy bench jack on the fly (Pic.2)

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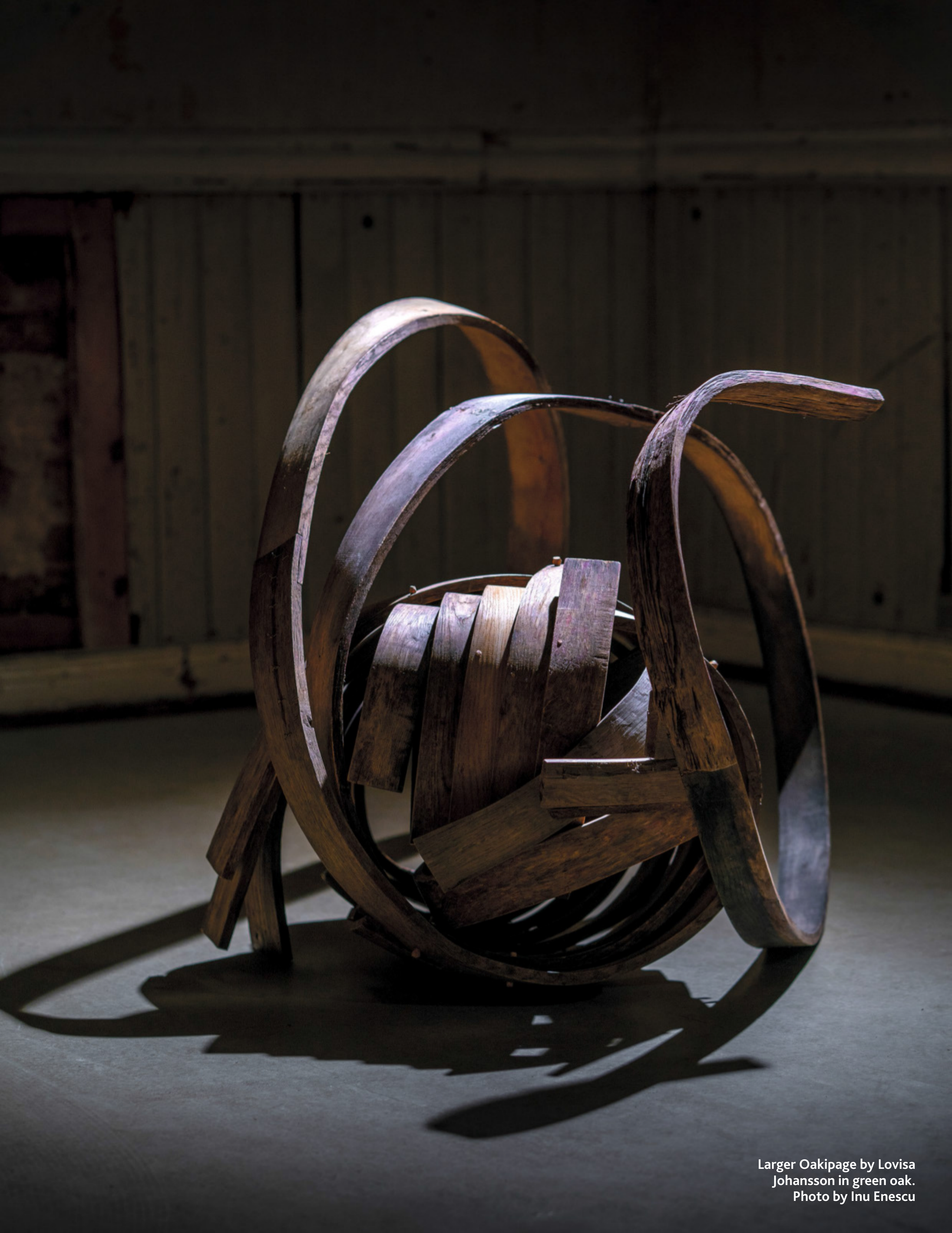

Larger Oakipage by Lovisa Johansson in green oak. Photo by Inu Enescu